امتحانات رقم (1)

الترم الثانى

30 Marks

Model (1)

9

A Choose the correct answer:

1 The base length of a triangle whose area is 60 cm^2, and its height is 10 cm. is ..... .

(12 cm , 10 cm , 60 cm , 5 cm)

2 A square whose diagonal length is 9 cm. its area = ... cm^2.

(40 , 50 , 40.5 , 50.5)

3 If the base length of a triangle is 4 cm, and its corresponding height is 6 cm, then its area is ..... cm^2. (24 , 12 , 36 , 14)

4 The sum of measures of the interior angles of a triangle equals .....° .

(360 , 180 , 90 , 60)

5 If Δ ABC ~ Δ XYZ , then m(∠B) = ... (m(∠C) , m(∠X) , m(∠Y) , m(∠A))

6 The angle whose measure is 180° is a/an ..... angle. (right , acute , obtuse , straight)

7 ABC is a triangle in which $(AB)^2 = (AC)^2 + (CB)^2$,then ∠B is ..... .

(right , acute , obtuse , straight)

8 If two polygons are similar, then the lengths of their corresponding sides are ..... .

(equal , congruent , proportional , otherwise)

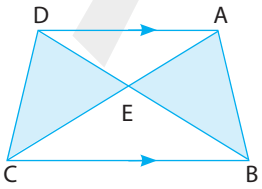
9 If the ratio of enlargement between two similar polygons equals ....., then the two polygons are congruent. ($\frac{1}{2}$, $\frac{1}{4}$, 1 , 2)

B Answer each of the following:

21

1 ABCD is a quadrilateral, $\overline{AD}$ // $\overline{BC}$, $\overline{AC} \cap \overline{BD} = \{E\}$

Prove that : the area of Δ ABE = the area of Δ DCE



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2 Determine the type of triangle LMN according to its angles, where LM = 7 cm, MN = 6 cm and LN =12 cm.

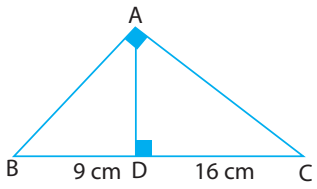
.....

.....

3 ABC is a triangle, m (∠BAC) = 90°, $\overline{AD} \perp \overline{BC}$,

BD = 9 cm , DC = 16 cm,

find the length of $\overline{AD}$, $\overline{AB}$, $\overline{AC}$



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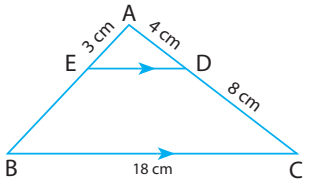
4 In the opposite figure:

$\overline{ED}$ // $\overline{BC}$, AD = 4 cm , DC = 8 cm, EA = 3 cm , BC = 18 cm

1) Prove that: Δ AED ~ Δ ABC

2) The length of $\overline{ED}$



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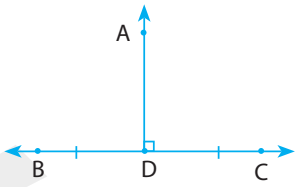
5 Complete:

(a) In the opposite figure,

The projection of $\overline{AD}$ on $\overline{BC}$ is ..... .



(b) The measures of base angles of an isosceles trapezium are ..... .

6 In the opposite figure: m (∠A) = 90° , AB = 15 cm, AD = 20 cm,

BC = 7 cm, CD = 24 cm, Prove that: m (∠C) = 90°

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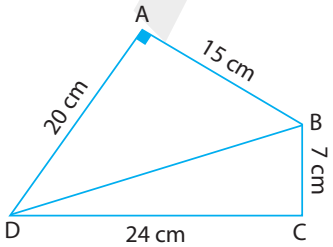


7 The lengths of two parallel bases of a trapezium are 9 cm. and 5 cm. Find its area if its height is 6 cm.

.....

.....

30 Marks

Model (2)

A Choose the correct answer:

9

1 The projection of a point on a given straight line is ..... .

(a point , a line segment , a ray , a straight line)

2 Two similar triangles, the ratio between the lengths of two corresponding sides in them is 2 : 3 , then the ratio between their perimeters is ..... .

(2:1 , 3:1 , 3 : 2 , 2 : 3)

3 ABCD is a parallelogram, its area is 46 cm^2, then the area of Δ ABC = ... cm^2.

(46 , 40 , 32 , 23)

4 ABC is a triangle in which $(AB)^2 > (BC)^2 + (AC)^2$, then ∠C is ..... angle.

(right , acute , obtuse , straight)

5 The diagonal lengths of a rhombus are 7 cm, 9 cm, then its area is ..... cm^2.

(31.5 , 40 , 40.5 , 63)

6 If Δ LMN ~ Δ ABC, then m(∠C) = m(∠.....) (L , M , N , A)

7 The parallelogram and ..... with common base and drawn between two parallel straight lines are equal in area. (polygon , triangle , rectangle , trapezium)

8 The median of the triangle divides its surface into two triangles ..... .

(similar , equal in area , isosceles , right-angled)

9 The area of the triangle is ..... the area of the parallelogram which have a common base and included between two parallel straight lines. (2 , 1 , 3 , $\frac{1}{2}$)

B Answer each of the following:

21

1 In the opposite figure:

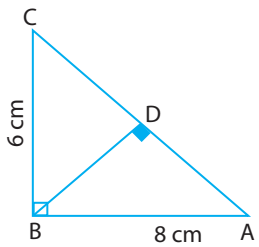
ABC is a right-angled triangle at B, $\overline{BD} \perp \overline{AC}$,

AB = 8 cm, and BC = 6 cm.

Find:

a) The length of $\overline{AC}$ and $\overline{BD}$

b) The length of the projection of $\overline{BC}$ on $\overleftrightarrow{AC}$



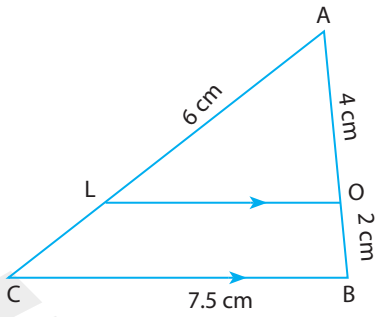
2 Determine the type of the triangle ABC according to its angles, where AB = 10 cm, BC = 5 cm, and AC = 9 cm.

3 ABC is a triangle, $\overline{BC}$ // $\overline{OL}$

, AO = 4 cm, BO = 2 cm, AL = 6 cm, BC = 7.5 cm

a) Prove that: Δ ABC ~ Δ AOL

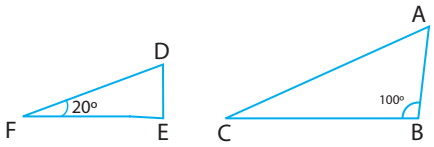
b) Find: the length of $\overline{OL}$ and $\overline{AC}$



4 Complete:

In the opposite figure: If Δ ABC ~ Δ DEF ,

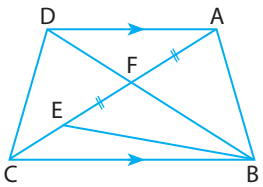
then m(∠A) = ... °



5 In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, F ∈ $\overline{AC}$, and E ∈ $\overline{AC}$, such that: AF = FE

Prove that: The area of ΔBFE = the area of Δ DFC



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6 The lengths of two parallel bases of a trapezium are 25 cm. and 10 cm, and its height is 8 cm. Find its area.

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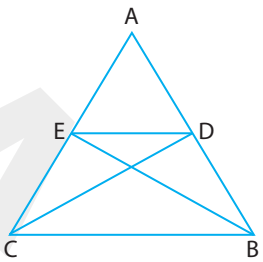
7 In the opposite figure:

If the area of Δ ADC = The area of ΔAEB,

prove that: $\overline{DE}$// $\overline{BC}$



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30 Marks

Model (3)

A Choose the correct answer:

9

1 The area of trapezium = ...

($b \times h$, $\frac{1}{2} \times (b_1 + b_2 + h)$, $\frac{1}{2} \times (b_1 + b_2) \times h$, $(b_1 + b_2) \times h$)

2 If the two polygons are similar, then their corresponding sides are ..... .

(equal , proportional , supplementary , complementary)

3 ABC is a triangle in which $(AB)^2 = (AC)^2 + (CB)^2$, then $\angle C$ is a/an ..... angle .

(right , acute , obtuse , straight)

4 A square whose perimeter is 24 cm., then its area is ..... cm^2. (24 , 6 , 16 , 36)

5 The area of triangle = $\frac{1}{2} \times$ ..... . ($b \times h$, $S \times S$, $L \times W$, $S \times 4$)

6 The number of axes of symmetry of an equilateral triangle equals ..... .

(0 , 1 , 2 , 3)

7 The area of the triangle is half the area of the parallelogram which have a common base and included between two ..... straight lines.

(parallel , perpendicular , intersecting , otherwise)

8 ABCD is a parallelogram, its area is 90 cm^2 , then the area of Δ ABC = ... cm^2.

(45 , 90 , 95 , 180)

9 The projection of ..... on a given straight line is a point.

(a point , a line segment , a ray , a straight line)

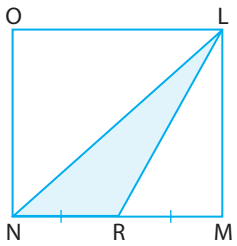
B Answer each of the following:

21

1 LMNO is a square, its perimeter is 36 cm,

R is the midpoint of $\overline{NM}$

Find the area of Δ LNR



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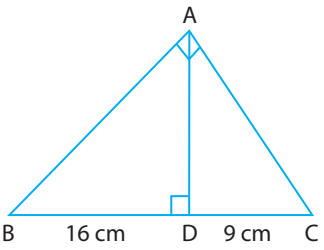
2 Complete: In the opposite figure,

$m(\angle BAC) = 90^\circ$, $\overline{AD} \perp \overline{BC}$

, DC = 9 cm , DB = 16 cm ,

then AD = ... cm.



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3 A trapezium of lengths of two parallel bases 18 cm. and 12 cm. with height 6 cm.

Find its area.

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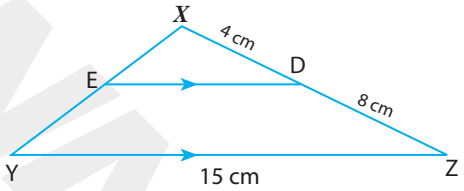
4 In the opposite figure, $\overline{DE}$ // $\overline{ZY}$, $XD = 4$ cm, $DZ = 8$ cm,

YZ =15 cm.

a) Prove that: Δ XED ~ ΔXYZ

b) Find: the length of $\overline{DE}$



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5 Determine the type of the triangle XYZ according to its angles, where XY = 10 cm,

YZ = 8 cm, and XZ = 6 cm.

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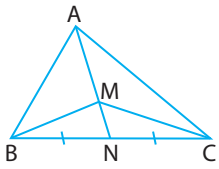
6 In the opposite figure, ABC is a triangle,

$\overline{AN}$ is a median, M ∈ $\overline{AN}$

Prove that: The area of Δ ABM = The area of ΔACM



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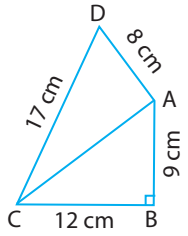
7 In the opposite figure,

ABC is a right-angled triangle at B, AB = 9 cm, BC = 12 cm

, DC = 17 cm, DA = 8 cm,

Prove that: m(∠DAC) = 90°



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30 Marks

Model (1)

9

A Choose the correct answer:

1 The base length of a triangle whose area is 60 cm^2, and its height is 10 cm. is ..... .

(**12 cm** , 10 cm , 60 cm , 5 cm)

2 A square whose diagonal length is 9 cm. its area = ... cm^2.

(40 , 50 , **40.5** , 50.5)

3 If the base length of a triangle is 4 cm, and its corresponding height is 6 cm, then its area is ..... cm^2.

(24 , **12** , 36 , 14)

4 The sum of measures of the interior angles of a triangle equals .....° .

(360 , **180** , 90 , 60)

5 If Δ ABC ~ Δ XYZ , then m(∠B) = ...

(m(∠C) , m(∠X) , **m(∠Y)** , m(∠A))

6 The angle whose measure is 180° is a/an ..... angle. (right , acute , obtuse , **straight**)

7 ABC is a triangle in which $(AB)^2 = (AC)^2 + (CB)^2$,then ∠B is ..... .

(right , **acute** , obtuse , straight)

8 If two polygons are similar, then the lengths of their corresponding sides are ..... .

(equal , congruent , **proportional** , otherwise)

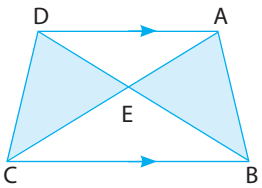
9 If the ratio of enlargement between two similar polygons equals ....., then the two polygons are congruent.

($\frac{1}{2}$, $\frac{1}{4}$, **1** , 2)

B Answer each of the following:

21

1 ABCD is a quadrilateral, $\overline{AD}$ // $\overline{BC}$, $\overline{AC} \cap \overline{BD} = \{E\}$



Prove that : the area of Δ ABE = the area of Δ DCE

Answer:

∵ Δ Δ ADB , ADC have a common base $\overline{AD}$, $\overline{AD}$ // $\overline{BC}$

∴ The area of triangle ADB = The area of triangle ADC

By subtracting the area of triangle AED from both sides

∴ The area of triangle ABE = The area of triangle DCE

2 Determine the type of triangle LMN according to its angles, where LM = 7 cm, MN = 6 cm and LN =12 cm.

Answer:

$(LN)^2 = (12)^2 = 144$

$(LM)^2 + (MN)^2 = (7)^2 + (6)^2 = 49 + 36 = 85$

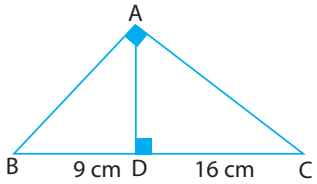
$(LN)^2 > (LM)^2 + (MN)^2$

The triangle LMN is obtuse angled triangle.

3 ABC is a triangle, m ($\angle$BAC) = 90°, $\overline{AD} \perp \overline{BC}$,

BD = 9 cm , DC = 16 cm,

find the length of $\overline{AD}$, $\overline{AB}$, $\overline{AC}$



Answer:

$\because$ m ($\angle$BAC) = 90° , $\overline{AD} \perp \overline{BC}$

$\therefore (AD)^2 = BD \times CD$

$\therefore (AD)^2 = 9 \times 16 = 144$

$\therefore AD = 12$ cm

$\therefore (AB)^2 = BD \times BC$

$\because (AB)^2 = 9 \times 25 = 225$

$\therefore AB = 15$ cm

$\because (AC)^2 = CD \times BC$

$\therefore (AC)^2 = 16 \times 25 = 400$

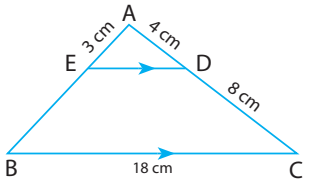
$\therefore AC = 20$ cm

4 In the opposite figure:

$\overline{ED}$ // $\overline{BC}$, AD = 4 cm , DC = 8 cm, EA = 3 cm , BC = 18 cm

1) Prove that: Δ AED ~ Δ ABC

2) The length of $\overline{ED}$



Answer:

$\because \overline{ED} \,//\, \overline{BC}$ and $\overline{AB}$ is a transversal

$\therefore m(\angle AED) = m(\angle B)$ (Corresponding angles) ,

$m(\angle ADE) = m(\angle C)$ (Corresponding angles), $\because m(\angle A)$ is a common angle

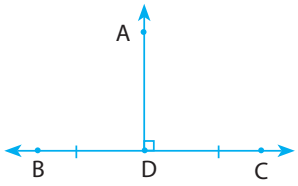
$\therefore \Delta AED \sim \Delta ABC$

$\therefore \frac{ED}{BC} = \frac{AD}{AC}$ $\therefore \frac{ED}{18} = \frac{4}{12}$,

$\therefore ED = 6$ cm

5 Complete:

(a) In the opposite figure,

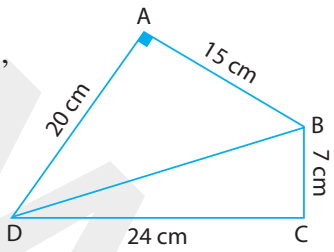


The projection of $\overline{AD}$ on $\overline{BC}$ is .....D..... .

(b) The measures of base angles of an isosceles trapezium are .....equal in measure..... .

6 In the opposite figure: $m(\angle A) = 90^\circ$, AB = 15 cm, AD = 20 cm,

BC = 7 cm, CD = 24 cm, Prove that: $m(\angle C) = 90^\circ$



Answer:

In Δ BAD:

$\because m(\angle A) = 90^\circ$

$\therefore (BD)^2 = (AB)^2 + (AD)^2$ $\therefore (BD)^2 = (15)^2 + (20)^2$ $\therefore BD = 25$ cm

In Δ BCD:

$\because (BD)^2 = (25)^2 = 625, (BC)^2 + (DC)^2 = (7)^2 + (24)^2 = 625$

$\because (BD)^2 = (BC)^2 + (DC)^2$ $\therefore m(\angle C) = 90^\circ$

7 The lengths of two parallel bases of a trapezium are 9 cm. and 5 cm. Find its area if its height is 6 cm.

Answer:

$$\text{Area of trapezium} = \frac{1}{2} \times (b_1 + b_2) \times h$$

$$= \frac{1}{2} \times (9 + 5) \times 6$$

$$= 42 \text{ cm}^2$$

30 Marks

Model (2)

A Choose the correct answer:

9

1 The projection of a point on a given straight line is ..... .

(**a point** , a line segment , a ray , a straight line)

2 Two similar triangles, the ratio between the lengths of two corresponding sides in them is 2 : 3 , then the ratio between their perimeters is ..... .

(2:1 , 3:1 , 3 : 2 , **2 : 3**)

3 ABCD is a parallelogram, its area is 46 cm^2, then the area of Δ ABC = ... cm^2.

(46 , 40 , 32 , **23**)

4 ABC is a triangle in which $(AB)^2 > (BC)^2 + (AC)^2$, then ∠C is ..... angle.

(right , acute , **obtuse** , straight)

5 The diagonal lengths of a rhombus are 7 cm, 9 cm, then its area is ..... cm^2.

(**31.5** , 40 , 40.5 , 63)

6 If Δ LMN ~ Δ ABC, then m(∠C) = m(∠.....) (L , M , **N** , A)

7 The parallelogram and ..... with common base and drawn between two parallel straight lines are equal in area. (polygon , triangle , **rectangle** , trapezium)

8 The median of the triangle divides its surface into two triangles ..... .

(similar , **equal in area** , isosceles , right-angled)

9 The area of the triangle is ..... the area of the parallelogram which have a common base and included between two parallel straight lines. (2 , 1 , 3 , $\frac{1}{2}$)

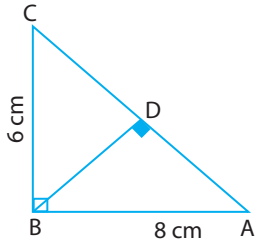
B Answer each of the following:

21

1 In the opposite figure:

ABC is a right-angled triangle at B, $\overline{BD} \perp \overline{AC}$,

AB = 8 cm, and BC = 6 cm.



Find:

a) The length of $\overline{AC}$ and $\overline{BD}$

b) The length of the projection of $\overline{BC}$ on $\overleftrightarrow{AC}$

Answer:

In ΔABC, $\because m(\angle B) = 90^\circ$, $\overline{BD} \perp \overline{AC}$

$\therefore (AC)^2 = (AB)^2 + (BC)^2$ $\quad\quad$ $\therefore (AC)^2 = (8)^2 + (6)^2$ $\quad\quad$ $\therefore AC = 10$ cm

$\therefore BD = \frac{AB \times BC}{AC} = \frac{8 \times 6}{10} = 4.8$ cm

$\because \overline{DC}$ is the the projection of $\overline{BC}$ on $\overleftrightarrow{AC}$

$\therefore (BC)^2 = CD \times AC$ $\quad\quad$ $\therefore (6)^2 = CD \times 10$

$\therefore CD = \frac{36}{10} = 3.6$ cm

2 Determine the type of the triangle ABC according to its angles, where AB = 10 cm, BC = 5 cm, and AC = 9 cm.

Answer:

$(AB)^2 = (10)^2 = 100$

$(BC)^2 + (AC)^2 = (5)^2 + (9)^2 = 25 + 81 = 106$

$(AB)^2 < (BC)^2 + (AC)^2$

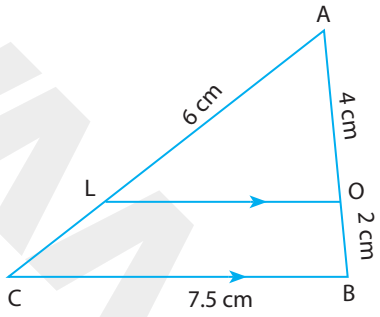
The triangle ABC is acute angled triangle.

3 ABC is a triangle, $\overline{BC}$ // $\overline{OL}$

, AO = 4 cm, BO = 2 cm, AL = 6 cm, BC = 7.5 cm

a) Prove that: $\Delta ABC \sim \Delta AOL$

b) Find: the length of $\overline{OL}$ and $\overline{AC}$



Answer:

$\because \overline{BC}$ // $\overline{OL}$, $\overleftrightarrow{AB}$ is a transversal.

$\therefore m(\angle B) = m(\angle AOL)$ (corresponding angles)

$\therefore m(\angle C) = m(\angle ALO)$

$\because \angle A$ is a common angle

$\therefore \Delta ABC \sim \Delta AOL$

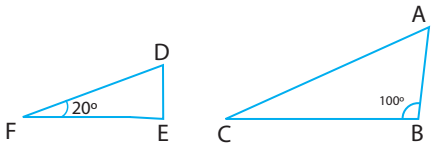
$\therefore \frac{AB}{AO} = \frac{BC}{OL} = \frac{AC}{AL}$ $\quad\quad$ $\therefore \frac{6}{4} = \frac{7.5}{OL} = \frac{AC}{6}$

$\therefore OL = \frac{7.5 \times 4}{6} = 5$ cm, and $AC = \frac{6 \times 6}{4} = 9$ cm

4 Complete:

In the opposite figure: If Δ ABC ~ Δ DEF ,

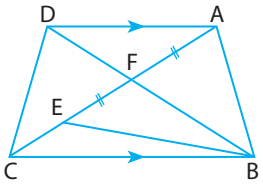
then m(∠A) = ...60..... °



5 In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, F ∈ $\overline{AC}$, and E ∈ $\overline{AC}$, such that: AF = FE

Prove that: The area of ΔBFE = the area of Δ DFC



Answer:

∵ Δ Δ ABD, ACD have a common base $\overline{AD}$, $\overline{AD}$ // $\overline{BC}$

∴ The area of triangle ADB = The area of triangle ADC,

By subtracting the area of triangle ADF from both sides

∴ The area of triangle AFB = The area of triangle DFC .....(1)

∵ $\overline{BF}$ is a median in the triangle ABE

∴ The area of triangle AFB = The area of triangle BFE .....(2)

From (1) and (2) ∴ The area of ΔBFE = The area of Δ DFC

6 The lengths of two parallel bases of a trapezium are 25 cm. and 10 cm, and its height is 8 cm. Find its area.

Answer:

Area of trapezium $= \frac{1}{2} \times (b_1 + b_2) \times h$

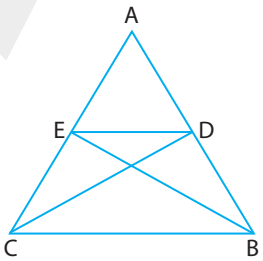
$= \frac{1}{2} \times (25 + 10) \times 8$

$= 140 \text{ cm}^2$

7 In the opposite figure:

If the area of Δ ADC = The area of ΔAEB,

prove that: $\overline{DE}$// $\overline{BC}$



Answer:

∵ The area of Δ ADC = The area of ΔAEB

by subtracting the area of Δ ADE from both sides

∴ the area of Δ EDB = the area of ΔEDC

,and they have a common base $\overline{DE}$ and on one side of it.

∴ $\overline{DE}$ // $\overline{BC}$

30 Marks

Model (3)

A Choose the correct answer:

9

1 The area of trapezium = ...

($b \times h$, $\frac{1}{2} \times (b_1 + b_2 + h)$, $\frac{1}{2} \times (b_1 + b_2) \times h$, $(b_1 + b_2) \times h$)

2 If the two polygons are similar, then their corresponding sides are ..... .

(equal , **proportional** , supplementary , complementary)

3 ABC is a triangle in which $(AB)^2 = (AC)^2 + (CB)^2$, then $\angle C$ is a/an ..... angle .

(**right** , acute , obtuse , straight)

4 A square whose perimeter is 24 cm., then its area is ..... cm^2. (24 , 6 , 16 , **36**)

5 The area of triangle = $\frac{1}{2} \times$ ..... . (**b × h** , S × S , L × W , S × 4)

6 The number of axes of symmetry of an equilateral triangle equals ..... .

(0 , 1 , 2 , **3**)

7 The area of the triangle is half the area of the parallelogram which have a common base and included between two ..... straight lines.

(**parallel** , perpendicular , intersecting , otherwise)

8 ABCD is a parallelogram, its area is 90 cm^2 , then the area of Δ ABC = ... cm^2.

(**45** , 90 , 95 , 180)

9 The projection of ..... on a given straight line is a point.

(**a point** , a line segment , a ray , a straight line)

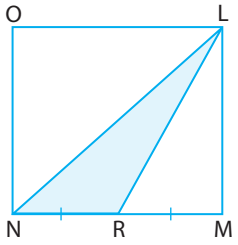
B Answer each of the following:

21

1 LMNO is a square, its perimeter is 36 cm,

R is the midpoint of $\overline{NM}$

Find the area of Δ LNR



Answer:

∵ The side length of the square LMNO = 36 ÷ 4 = 9 cm.

∴ The area of Δ LNR = $\frac{1}{2} \times b \times h = \frac{1}{2} \times NR \times LM$

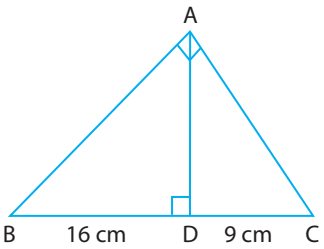
$= \frac{1}{2} \times 4.5 \times 9 = 20.25 \ cm^2$

2 Complete: In the opposite figure,

$m(\angle BAC) = 90^\circ$, $\overline{AD} \perp \overline{BC}$

, DC = 9 cm , DB = 16 cm ,

then AD = ...12..... cm.



3 A trapezium of lengths of two parallel bases 18 cm. and 12 cm. with height 6 cm.

Find its area.

Answer:

Area of trapezium $= \frac{1}{2} \times (b_1 + b_2) \times h$

$= \frac{1}{2} \times (18 + 12) \times 6$

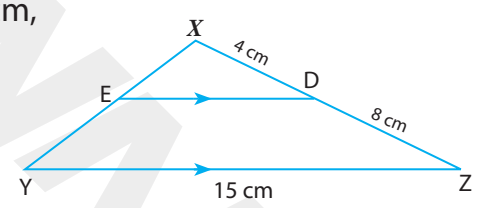
$= 90 \text{ cm}^2$

4 In the opposite figure, $\overline{DE}$ // $\overline{ZY}$, XD = 4 cm, DZ = 8 cm,

YZ =15 cm.

a) Prove that: Δ XED ~ ΔXYZ

b) Find: the length of $\overline{DE}$



Answer:

$\because \overline{DE}$ // $\overline{ZY}$, $\overleftrightarrow{XY}$ is a transversal

$\therefore m(\angle XED) = m(\angle Y)$ (corresponding angles)

$\therefore m(\angle XDE) = m(\angle Z)$

$\because (\angle X)$ is a common angle

$\therefore \Delta XED \sim \Delta XYZ$

$\therefore \frac{DE}{YZ} = \frac{XD}{XZ}$ $\quad \therefore \frac{DE}{15} = \frac{4}{12}$ $\quad \therefore DE = 5$ cm

5 Determine the type of the triangle XYZ according to its angles, where XY = 10 cm, YZ = 8 cm, and XZ = 6 cm.

Answer:

$(XY)^2 = (10)^2 = 100$

$(YZ)^2 + (XZ)^2 = (8)^2 + (6)^2 = 64 + 36 = 100$

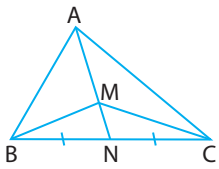
$(XY)^2 = (YZ)^2 + (XZ)^2$

The triangle XYZ is a right – angled triangle.

6 In the opposite figure, ABC is a triangle,

$\overline{AN}$ is a median, M $\in \overline{AN}$

Prove that: The area of Δ ABM = The area of ΔACM



Answer:

∵ $\overline{AN}$ is a median ∴ The area of Δ ABN = the area of ΔCAN (1)

∵ $\overline{MN}$ is a median in ΔMBC ∴ The area of Δ BMN = the area of ΔCMN (2)

By subtracting (2) from (1):

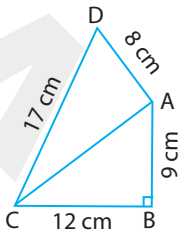
∴ The area of Δ ABM =the area of ΔACM

7 In the opposite figure,

ABC is a right-angled triangle at B, AB = 9 cm, BC = 12 cm

, DC = 17 cm, DA = 8 cm,

Prove that: m(∠DAC) = 90°



Answer:

In Δ ABC: ∵ m(∠B) = 90°

∴ $(AC)^2 = (AB)^2 + (BC)^2 = (9)^2 + (12)^2 = 225$

In Δ ACD: ∵ $(CD)^2 = (17)^2 = 289$

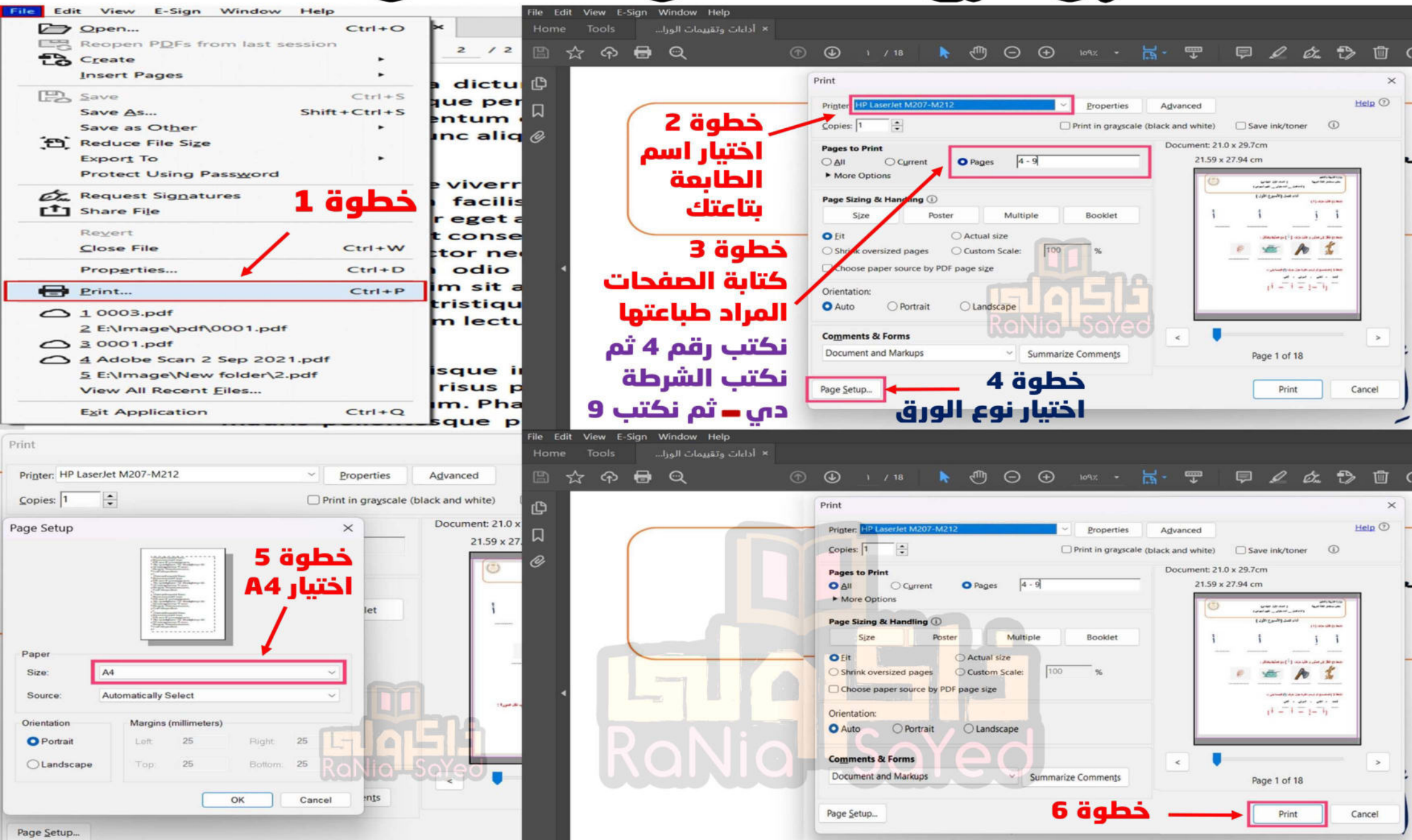
, $(AD)^2 + (AC)^2 = (8)^2 + 225 = 289$

∴ $(CD)^2 = (AD)^2 + (AC)^2$

∴ m(∠DAC) = 90°

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9



امتحانات رقم (2)

الترم الثانى

Second Geometry

Model 1

Q1) Choose the correct answer from those given:

1. The area of the triangle is ..... the area of the parallelogram which has a common base with it, and its vertex lies on the straight line parallel to this base.

a Equal to b half c twice d quarter

2. If ABCD is a parallelogram, $E \in \overline{AD}$ and the area of $\Delta EBC = 35cm^2$, then the area of $\square ABCD$= ..... cm^2.

a 35 b 70 c 17 d 17 .5

3. If the lengths of two adjacent sides of a parallelogram are 9cm. and 7cm. and its smaller height is 4cm., then its area equals ..... cm^2.

a 14 b 18 c 28 d 36

4. Δ ABC in which $(AB)^2 = (AC)^2 + (BC)^2$, $m(\angle B) = 40°$ then, $m(\angle A)$= ..... °.

a 40 b 50 c 90 d 130

5. If the area of a square is $32cm^2$. What is the length of one diagonal?
..... cm.

a 8 b $8\sqrt{2}$ c 4 d 4

6. If $\Delta ABC \sim \Delta XYZ$ and AB: XY= 2: 5, AC= 8cm, then XZ= ..... cm.

a 10 b 16 c 20 d 40

7. The length of the projection of a given line segment ..... the length of the original line segment.

a $\geq$ b $\leq$ c $<$ d $>$

8. If two polygons are similar and the ratio between the lengths of two corresponding sides is 1:3 and the perimeter of smaller polygons is 15cm, then the perimeter of the greater polygon is ..... cm.

a 30 b 45 c 60 d 75

9. A square of perimeter 20cm then its area equals ..... cm^2.

a 20 b 25 c 50 d 100

Q2) Answer the following questions:

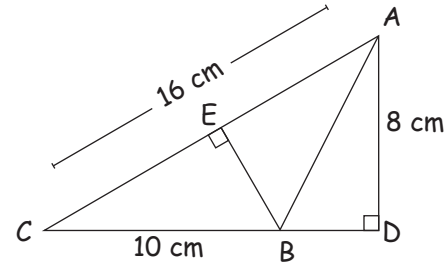
1. In the opposite figure:

$\overline{AD} \perp \overline{CB}$, $\overline{BE} \perp \overline{AC}$, AC= 16cm,

BC= 10cm and AD= 8cm.

Find: a) Area of Δ ABC.

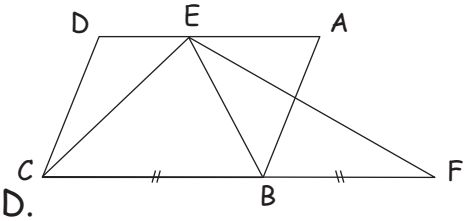
b) The length of $\overline{BC}$.



2. In the opposite figure:

ABCD is a parallelogram, B is the midpoint of $\overline{CF}$, Prove that:

The area of Δ EFC= the area of ▱ ABCD.

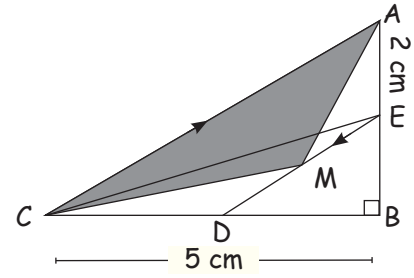


3. In the opposite figure:

Δ ABC is right at B, $\overline{ED}$ // $\overline{AC}$

AE= 2cm, BC= 5cm.

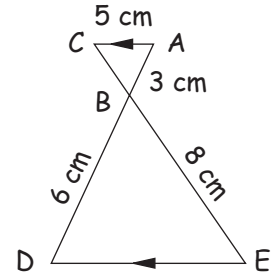
Find area of Δ AMC.



4. In the opposite figure: $\overline{AC}$ // $\overline{ED}$ AC= 5cm, BE= 8cm, AB= 3cm and BD= 6cm.

Prove that: (a) $\Delta ABC \sim \Delta DBE$.

(b) Find the length of each $\overline{BC}$ and $\overline{ED}$.

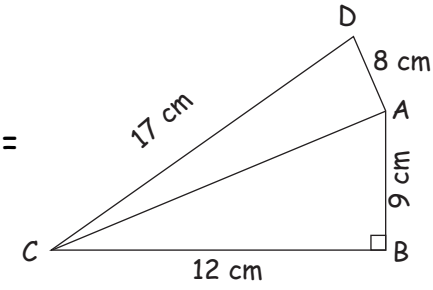


5. In the opposite figure:

ABCD is a quadrilateral in which: m ($\angle$ B)= 90° AB= 9cm, BC= 12cm, CD= 17 cm and DA= 8cm.

Prove that: m($\angle$ DAC)= 90°

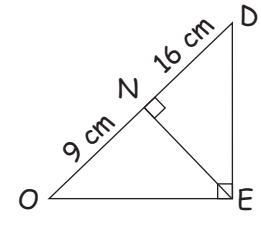
Then find: The area of the figure ABCD.



6. In the opposite figure: ΔDEO is right angle triangle at E.

$\overline{EN} \perp \overline{DO}$, DN= 16cm and ON= 9cm,

Find the length of each $\overline{EN}$, $\overline{ED}$.

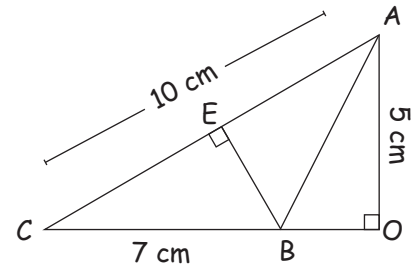


7. In the opposite figure:

$\overline{AO} \perp \overline{CB}$, $\overline{BE} \perp \overline{AC}$, AC= 10cm, BC= 7cm and OA= 5cm.

(a) Find the length of $\overline{BE}$.

(b) Area of Δ ABC.

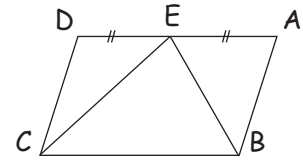


Model 2

1. The ratio between the area of the parallelogram and the area of the triangle whose base is common and is included between two parallel straight lines= .....

a 1 : 2 b 1 : 3 c 2 : 1 d 2 : 3

2. In the opposite figure:
If ABCD is a parallelogram, its area= 24cm^2,
then the area of Δ ABE= ..... cm^2.



a 24 b 12 c 8 d 6

3. The area of a triangle whose base 8cm and its corresponding height is 5cm equals ..... cm^2.

a 80 b 40 c 20 d 9

4. ΔABC in which $(AC)^2 = (BC)^2 - (AB)^2$, then the angle ∠ A is .....

a acute b right c obtuse d straight

5. The diagonals of a rhombus are 12cm and 10cm. What is its area? ..... cm^2.

a 120 b 60 c 44 d 11

6. If the drawing scale of two similar triangles 2: 3 and measure of one of angles of smaller triangle is 60°, then the measure of corresponding angle in greater triangle equals ..... °.

a 60 b 90 c 120 d 150

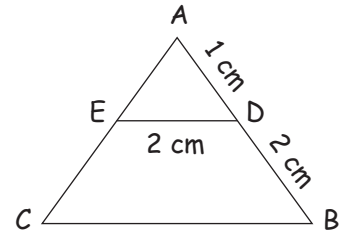
7. If the two triangles are congruent, then the ratio of similarity between them are equal .....

a 1 b 2 c 0.5 d 0.25

8. ABC is a triangle in which $\overline{AC} \perp \overline{BC}$, then the projection of $\overline{AB}$ on $\overline{BC}$ is .....

a $\overline{BC}$ b $\overline{DC}$ c $\overline{AC}$ d $\overline{AB}$

9. In the opposite figure: ABC ~ DEO, AD= 1cm, DB= DE= 2cm, then BC= ..... cm.

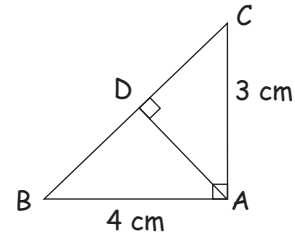


a 3 b 4

c 6 d 8

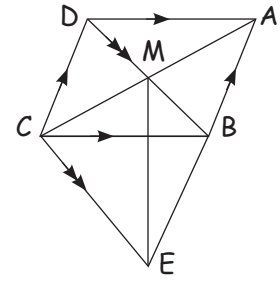
Q2) Answer the following questions:

1. In the opposite figure:
ABC is a right-angled triangle at A, $\overline{AD} \perp \overline{BC}$,
AB= 4cm and AC= 3cm.
Find: a) The area of ΔABC. b) The length of $\overline{AD}$.

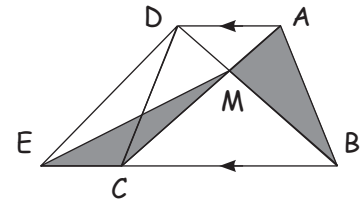


2. A square, whose area equals the area of the rectangle whose dimensions are 2cm, and 9cm, find the length of its diagonal.

3. In the opposite figure:
ABCD and BECD are two parallelograms,
Where $\overline{AC} \cap \overline{BD} = \{M\}$.
Prove that: The area of Δ ABC= the area of ΔMEC.



4. In the opposite figure: $\overline{AD} \parallel \overline{BC}$ and the area of Δ ABM= the area of Δ MCE.
Prove that: $\overline{AC} \parallel \overline{DE}$

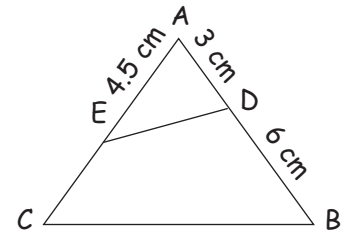


5. In the opposite figure:

m (∠ AED)= (∠ B), AD= 3cm, AE= 4.5cm.

Prove that: ΔADE ~ ΔACB.

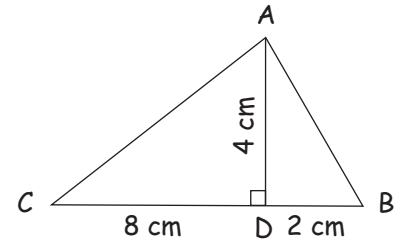
Then find: The length of $\overline{EC}$.



6. In the opposite figure: ABC is a triangle in which $\overline{AD} \perp \overline{BC}$, BD= 2cm,

AD= 4cm, CD= 8cm.

Prove that: m(∠ BAC)= 90°.



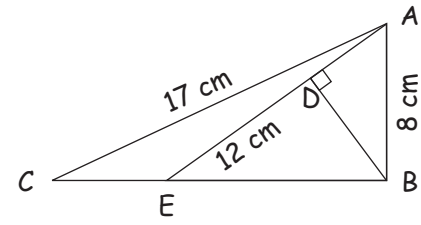
7. In the opposite figure:

m(∠ ABC)= (∠ ADB)= 90°, AC= 17cm,

AB= 8cm, ED= 12cm.

Find: (a) The length of $\overline{AD}$ and $\overline{BD}$.

(b) The length of the projection of $\overline{AC}$ on $\overline{BC}$.



Model 3

Q1) Choose the correct answer from those given:

1. If the base length of a triangle is 4 cm. and the corresponding height is 3 cm. ,then its area= ..... cm^2.

a 6 b 12 c 24 d 34

2. In Δ ABC: D is midpoint of $\overline{BC}$, Area of Δ ABD= $20cm^2$ then area of Δ ABC= ..... cm^2.

a 10 b 20 c 40 d 80

3. DABC in which $(AB)^2 > (AC)^2 + (CB)^2$, then the angle ∠ A is .....

a acute b right c obtuse d straight

4. The area of a rhombus is $60cm^2$, and the length of one diagonal is 12cm. What is the length of the other diagonal? ..... cm.

a 10 b 20 c 5 d 40

5. In the two similar polygons their corresponding angles are ..... in measure.

a equal b different
c proportional d complementrary

6. The length of the projection of a given line segment ..... the length of the original line segment.

a ≥ b ≤ c < d >

7. If the figure ABCD ~ the figure XYZL, m(∠A)= 80, m(∠Z)= 50°, m(∠D)= 120°, then m(∠ B)= ..... °.

a 90 b 110 c 130 d 160

8. The area of a rectangle whose length of one of its dimensions= 12cm, its diagonal= 13cm equal ..... cm^2.

a 156 b 78 c 60 d 52

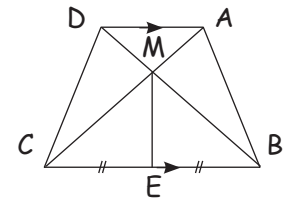
9. If the base length of a parallelogram is 8cm. and the corresponding height is 3cm, then its area equals ..... cm^2.

a 13 b 35 c 24 d 12

Q2) Answer the following questions:

1. In the opposite figure:

$\overline{AD}$ // $\overline{BC}$ and E is midpoint of $\overline{BC}$



Prove that:

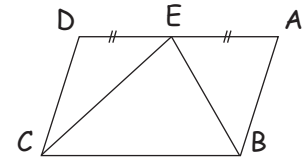
a) The area of Δ AMB= the area of Δ DMC.

b) The area of figure ABEM= the area of figure DCEM.

2. In the opposite figure:

If ABCD is a parallelogram,

its area= 52cm^2.



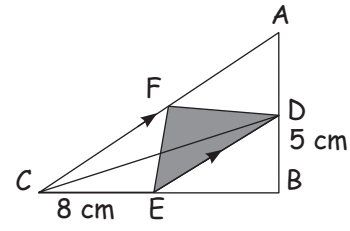
Find with proof: The area of Δ ABET.

3. In the opposite figure:

Δ ABC is right at B, $\overline{ED}$ // $\overline{AC}$

and EC= 8cm.

Find with proof: The area of Δ FDE.



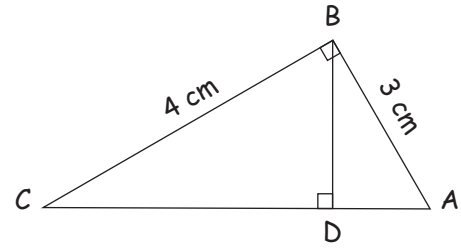
4. In the opposite figure:

Δ ABC is right angle triangle at B,

$\overline{BD} \perp \overline{AC}$, AB= 3cm and BC= 4cm,

Prove that: Δ BAC ~ Δ DAB.

Find the length of each $\overline{AD}$ and $\overline{CD}$.

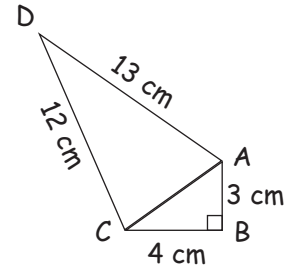


5. In the opposite figure:

AB= 3cm, BC= 4cm, AD= 13cm,

CD= 12cm.

Prove that: m($\angle$ ACD)= 90°.



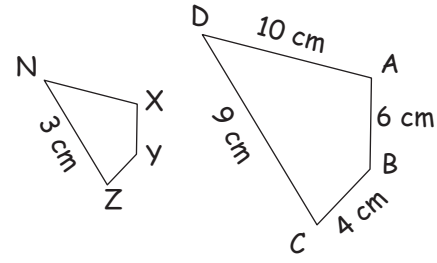
6. In the opposite figure:

The polygon ABCD ~ The polygon XYZN

AB= 6cm, BC= 4cm, CD= 9cm,

DA= 10cm. and ZN= 3cm.

Find the length of each $\overline{XY}$, $\overline{XN}$ and $\overline{YZ}$.



7. The area of a trapezoid is 68 square inches, and its two parallel bases are 6 inches and 11 inches. What is its height?

Model 4

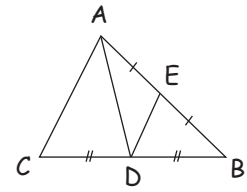
Q1) Choose the correct answer from those given:

1. If the lengths of two adjacent sides of a parallelogram are 8cm and 9cm and its greater height is 6cm, then its area equals ..... cm^2.

a 24 b 27 c 48 d 54

2. In the opposite figure:

The area of ΔABC= ..... the area of Δ BED.



a $\frac{1}{2}$ b 2

c $\frac{1}{4}$ d 4

3. DABC in which $(AC)^2 + (BC)^2 = (AB)^2 - 9$, then the angle $\angle C$ is .....

a acute b right c obtuse d straight

4. The area of a parallelogram is ..... the area of a triangle if they have a common base and lies between two parallel straight lines including them.

a equal to b half c twice d quarter

5. The parallel bases of a trapezium are 8cm and 12cm, and the height is 5cm. What is Its area?

a 200 b 100 c 50 d 240

6. A square of diagonal length 12cm then its area= ..... cm^2.

a 24 b 36 c 48 d 72

7. If $\overline{AB}$ // $\overleftrightarrow{XY}$, then the length of the projection of $\overline{AB}$ on $\overleftrightarrow{XY}$ ..... the length of $\overline{AB}$.

a > b < c = d ≡

8. If two polygons are similar and the ratio between the lengths of two corresponding sides is 1:3 and the perimeter of smaller polygonbis 15cm. Then, the perimeter of the greater polygon is ..... cm.

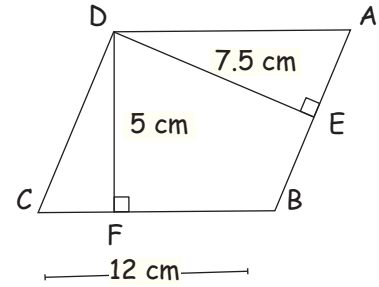
a 30 b 45 c 60 d 75

9. The area of rectangle whose dimensions 4cm, 9cm ..... the area of rhombus whose diagonals 12cm and 5cm.

a) > b) = c) < d) ≡

Q2) Answer the following questions:

1. In the opposite figure: if ABCD is a parallelogram:Find the length of $\overline{AB}$



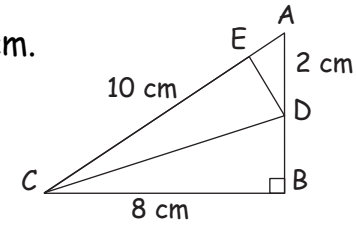
2. In the opposite figure:

$\overline{AB} \perp \overline{CB}$, $\overline{DE} \perp \overline{AC}$, AC= 10cm, BC= 8cm and AD= 2cm.

a) Prove that:

The area of Δ ADC = $\frac{1}{3}$ the area of Δ ABC.

b) Find: The length of $\overline{DE}$.

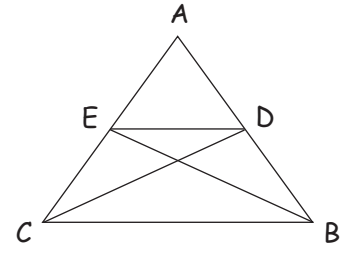


3. In the opposite figure :

ABC is a triangle, D ∈ $\overline{AB}$ and E ∈ $\overline{AC}$ such that:

The area of Δ ABE= the area of Δ ACD,

Prove that: $\overline{ED}$ // $\overline{BC}$.



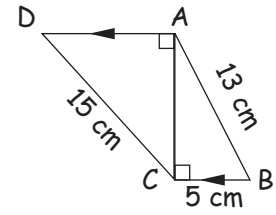
4. In the opposite figure: $\overline{AD}$ // $\overline{BC}$

AB= 13cm, BC= 5cm, CD= 15cm,

m(∠ ACB)= (∠ DAC)= 90°.

Find: (a) The projection of $\overline{AB}$ on $\overline{AC}$.

(b) The projection of $\overline{CD}$ on $\overline{AD}$.

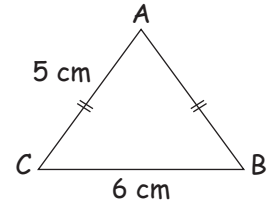


5. In the opposite figure:

AB= AC= 5cm, BC= 6cm.

Find: (a) The projection of $\overline{AB}$ on $\overleftrightarrow{BC}$.

(b) The area of ΔABC.

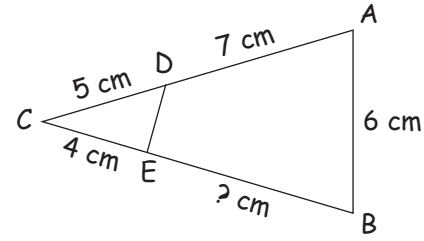


6. In the opposite figure: If ΔCDE ~ ΔCBA

CD= 5cm, AD= 7cm, CE= 4cm and

AB= 6cm.

Then find: The length of $\overline{BE}$ and $\overline{DE}$.



7. Find the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 6 meters and 24 meters.

Model 5

Q1) Choose the correct answer from those given:

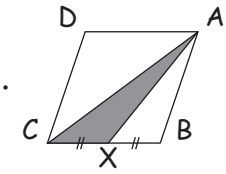
1. If the area of a triangle is $54cm^2$ and its height is 6cm, then the length of its corresponding base equals ..... cm.

a 9 b 12 c 18 d 15

2. If ABCD is a parallelogram, $E \in \overline{AD}$ and the area of $\Delta EBC = 42\ cm^2$, then the area of ▱ ABCD= ..... cm^2.

a 42 b 84 c 21 d 10.5

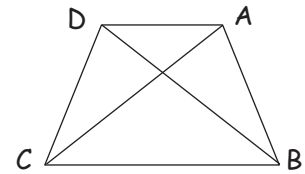
3. In the opposite figure: BX= XC



The area of Δ AXC= ..... the area of parallelogram ABCD.

a $\frac{1}{2}$ b $\frac{1}{4}$ c $\frac{1}{8}$ d 2

4. If the area of Δ ABC= the area of Δ DBC, then.



a $\overline{AB} // \overline{CD}$ c $\overline{AD} // \overline{BC}$

b AB = CD d AD = BC

5. The height of a trapezium is 4cm, and the area is $40cm^2$. If one parallel side is 8cm. What is the length of the other parallel side?

..... cm.

a 10 b 12 c 14 d 20

6. The two polygons are similar if the lengths of the corresponding sides are .....

a congruent b equal in length c proportional d perpendicular

7. A rhombus whose diagonals lengths are 12cm, 9cm then its area= ..... cm^2.

a 18 b 108 c 45 d 54

8. If the projection of a line segment on a straight line is a point then the line segment ..... the straight line.

a // b ⊥ c ≡ d ⊂

9. ABC is an acute triangle in which AB= 6cm, BC= 8cm then the length of AC can be equal ..... cm.

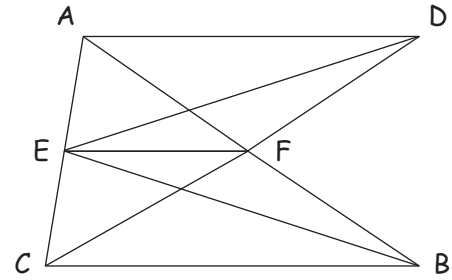
a 2 b 6 c 10 d 14

Q2) Answer the following questions:

1. In the opposite figure: $\overline{AD}$ // $\overline{EF}$ // $\overline{CB}$

Prove that:

The area of Δ CDE= the area of Δ AEB.

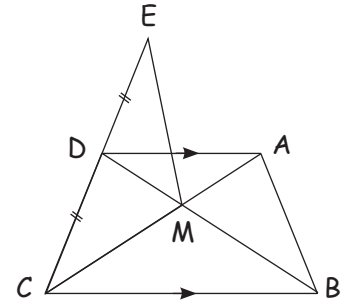


2. In the opposite figure:

$\overline{AD}$ // $\overline{BC}$ and D is midpoint of $\overline{EC}$

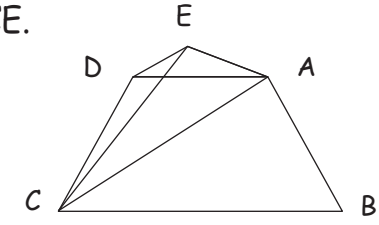
Prove that:

a) The area of Δ MDE= the area of ΔAMB.



3. The area of figure ABCD = the area of figure ABCE.

Prove that: $\overline{ED}$ // $\overline{AC}$.



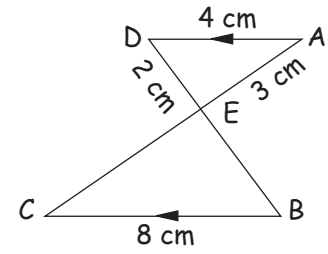
4. In the opposite figure: $\overline{AD}$ // $\overline{BC}$

AD= 4cm , AE= 3cm, DE= 2cm

and BC= 8cm.

(a) Prove that: ΔAED ~ ΔCEB.

(b) find: The perimeter of ΔEBC.



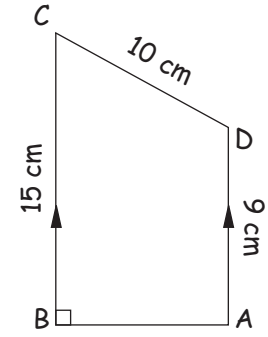
5. In the opposite figure: $\overline{AD}$ // $\overline{BC}$,

m(∠ ABC)= 90° AD= 9cm, BC= 15cm,

DC= 10cm.

Find: (a) The length of projection of $\overline{DC}$ on $\overleftrightarrow{BC}$.

(b) The length of projection of $\overline{DC}$ on $\overleftrightarrow{AB}$.

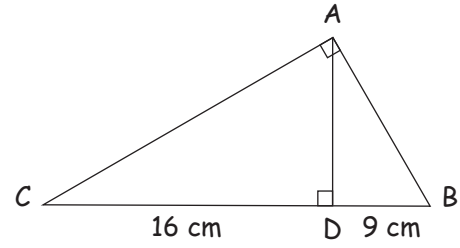


6. In the opposite figure:

ΔABC is right angle triangle at A,

$\overline{AD} \perp \overline{BC}$, DB= 9cm and DC= 16cm,

Find the length of $\overline{AC}$ and $\overline{AD}$.



7. Determine the type of angle C in Δ ABC in which AB= 7cm,

BC= 3cm, and AC= 5cm.

Model Answers Geometry

Model 1

1 1. b 2. b 3. d 4. b 5. a
6. c 7. b 8. b 9. b

---

2 **1. a.** Area of $\Delta ABC = \frac{1}{2} \times 10 \times 8 = 40 cm^2$.

b. $40 = \frac{1}{2} \times 16 \times BE$.

$BE = 5cm$.

2. $\because E \in \overline{AD}$

$\therefore a(\Delta EBC) = \frac{1}{2} a(\square ABCD) \rightarrow ①$

$\because \overline{BE}$ is median of ΔEFC.

$\therefore a(\Delta EBC) = \frac{1}{2} a(\Delta EFC) \rightarrow ②$

$\therefore a(\square ABCD) = a(\Delta EFC)$

3. Area of $\Delta AEC = \frac{1}{2} AE \times CB$

$= \frac{1}{2} \times 2 \times 5 = 5 cm^2$.

$\because \overline{ED} // \overline{AC}$

$\therefore$ Area of ΔAEC = area of $\Delta AMC = 5cm^2$

with common base $\overline{AC}$.

4. $\because \overline{AC} // \overline{ED}$

① $m(\angle A) = m(\angle D)$ Alternats

② $m(\angle C) = m(\angle E)$ Alternats

$\therefore \Delta ABC \sim \Delta DBE$

$\frac{AB}{DB} = \frac{CB}{EB} = \frac{AC}{DE}$

$\frac{3}{6} = \frac{CB}{8} = \frac{5}{ED}$

$\therefore BC = 4cm$. $ED = 10cm$.

5. $(AC)^2 = 9^2 + (12)^2 = 225$

$(AD)^2 + (AC)^2 = (8)^2 + 225 = 289$

$(DC)^2 = (17)^2 = 289$

$(DC)^2 = (AD)^2 + (AC)^2$

$m(\angle DAC) = 90°$

6. $(EN)^2 = DN \times ON = 16 \times 9 = 144$

$EN = 12cm$.

$(ED)^2 = DN \times DO = 16 \times 25 = 400$

$ED = 20cm$.

7. Ⓐ In ΔAOC, BEC

$(\angle AOC) = m(\angle BEC) = 90°$

$\angle C$ is common.

$\therefore \Delta AOC \sim \Delta BEC$

$\frac{AO}{BE} = \frac{AC}{BC} = \frac{5}{BE} = \frac{10}{7}$ $BE = 3.5cm$

Ⓑ area of ΔABC

$= \frac{1}{2} \times BC \times AO = 17.5 cm^2$.

Model 2

1 1. c 2. b 3. c 4. b 5. b
6. a 7. a 8. a 9. c

---

2 **1. a)** Area of $\Delta ABC = \frac{1}{2} \times 4 \times 3 = 6$ cm

b) $BC = \sqrt[3]{32 + 42} = 5$ cm

$\therefore \frac{1}{2} \times 5 \times AD = 6$ $AD = \frac{12}{5} = 2.4$ cm

2. Area of square= area of rectangle

$= 2 \times 9 = 18 cm^2$.

$\frac{1}{2} d^2 = 18$ $d = 6cm$.

3. $\because \overline{AE} // \overline{DC}$

$\therefore a(\square ABCD) = a(\square BECD) \rightarrow ①$

$\therefore a(\Delta ABC) = \frac{1}{2} a(\square ABCD) \rightarrow ②$

$\because M \in \overline{BD}$

$\therefore a(\Delta CME) = \frac{1}{2} a(\square BECD) \rightarrow ③$

$\therefore a(\Delta ABC) = a(\Delta MEC)$

4. $\because \overline{AD} // \overline{BC}$

$a(\Delta ABM) = a(\Delta CDM)$

$\therefore a(\Delta MCE) = a(\Delta CMD)$ with base $\overline{CM}$

$\therefore \overline{MC} // \overline{DE}$ i.e. $\overline{AC} // \overline{DE}$

5. In ΔΔADE, ACB

① m(∠ AED)= m(∠ B)

② ∠ A is common.

∴ Δ ADE ~ Δ ACB

$\frac{AD}{AC} = \frac{AE}{AB}$

$\frac{3}{AC} = \frac{4.5}{9}$ ∴ AC= 6cm

∴ EC= 1.5cm

6. $(AB)^2 = 2^2 + 4^2 = 20$

$(AC)^2 = (4)^2 + 8^2 = 80$

$(BC)^2 = (10)^2 = 100$

∵ $(AB)^2 + (AC)^2 = (BC)^2$

∴ m(∠ BAC)= 90°

7. ⓐ $(AB)^2$= AD × AE

$(8)^2$= AD (AD + 12)

$(AD)^2$ + 12 AD − 64= 0

AD= 4 cm

$(BD)^2$= 4 × 12= 48

BD= $4\sqrt{3}$ cm.

ⓑ BC= $\sqrt[2]{17^2 - 8^2}$ = 15cm.

Model 3

1 **1.** a **2.** c **3.** a **4.** a **5.** a **6.** b **7.** b **8.** c

---

2 **1.** ∵ $\overline{AD}$ // $\overline{BC}$

a(Δ ABC) = a(Δ DBC)

by subtract a(Δ AMD)

a(Δ AMB) = a(Δ DMC) ⟶ ①

∵ $\overline{ME}$ is medim

a(Δ BME) = a(Δ CME) ⟶ ②

By adding ① , ②

∴ a(figure ABEM) = a(figure DCEM)

2. ∵ E ∈ $\overline{AD}$

∴ $a(\Delta EBC) = \frac{1}{2}\, a(\square ABCD) = 26\ cm^2$.

∴ a(Δ ABE) + a(Δ DEC) = 26 cm^2.

∵ AE = DE

∴ a(Δ ABE) = a(Δ DEC) = 13 cm^2.

3. $a(\Delta CED) = \frac{1}{2} \times 8 \times 5 = 20\ cm^2$.

∵ $\overline{ED}$ // $\overline{CF}$

∴ a(Δ FDE) + a(Δ CDE) = 20 cm^2.

with common base $\overline{DE}$.

4. In ΔΔ BAC, DAB

① ∠ A is common.

② m(∠ ABC)= m(∠ ADB= 90°

∴ Δ BAC ~ Δ DAB

$\frac{AB}{AD} = \frac{AC}{AB}$

$\frac{3}{AD} = \frac{5}{3}$ ∴ AD= $\frac{9}{5}$ = 1.8cm.

CD= 5 − 1.8= 3.2cm.

5. In Δ ABC

$(AC)^2 = 3^2 + 4^2 = 25$

In Δ ACD

$(AC)^2 + (CD)^2 = 25 + (12)^2 = 169$

$(AC)^2 = (13)^2 = 169$

∴ $(AD)^2 + (CD)^2 = (AD)^2$

∴ m(∠ ACD)= 90°

6. $\frac{CD}{ZN} = \frac{AB}{xy} = \frac{BC}{YZ} = \frac{AD}{xz}$

$\frac{6}{XY} = \frac{4}{YZ} = \frac{10}{XN} = \frac{9}{3}$

∴ XY= 2cm, YZ = 1.3 , XN = 3.3 cm.

7. $68 = \frac{1}{2}(6 + 11) \times h$

$h = \frac{2 \times 68}{17}$ ∴ h= 8cm.

Model 4

1 1. c 2. d 3. c 4. c 5. c
6. d 7. c 8. b 9. a

2 1. a(▱ ABCD) = 12 × 5 = 60cm

$\therefore$ AB × DE = 60

$AB = \frac{60}{7.5} = 8$ cm

2. a. $AB = \sqrt{10^2 - 8^2} = 6$ cm

$a(\Delta ABC) = \frac{1}{2} \times 8 \times 6 = 24\ cm^2$

$a(\Delta ADC) = \frac{1}{2} \times 2 \times 8 = 8\ cm^2$

$\therefore a(\Delta ADC) = \frac{1}{3} a(\Delta ABC)$

⟶ Consider other solution.

b) $DE = \frac{8}{5} = 1.6$ cm

3. a (Δ ABE) = a (Δ ACD) by subtract area of Δ ADE

$\therefore$ a (Δ BDE) = a(Δ DCE) with the common base $\overline{ED}$

$\therefore \overline{BC} // \overline{ED}$

4. Ⓐ The projection of $\overline{AB}$ on $\overline{AC}$ is $\overline{AC}$

$AC = \sqrt{(13)^2 - (5)^2} = 12$cm.

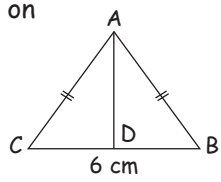
Ⓑ The projection of $\overline{CD}$ on $\overline{AD}$ is $\overline{AD}$

$AD = \sqrt{(15)^2 - (12)^2} = 9$cm.

5. Construction: draw $\overline{AD} \perp \overline{BC}$

Ⓐ The projection of $\overline{AB}$ on $\overleftrightarrow{BC}$ is $\overline{BD}$.

BD= 3cm.



Ⓑ $AD = \sqrt{(5)^2 - (3)^2} = 4$cm.

The area= $\frac{1}{2} \times 6 \times 4 = 12cm^2$.

6. $\frac{CD}{CB} = \frac{CE}{AC} = \frac{ED}{AB}$

$\frac{5}{CB} = \frac{4}{12} = \frac{ED}{6}$

$\therefore$ CB = 15 cm. $\therefore$ EB = 11 cm.

ED = 2cm.

7. Area of square= area of rhombus.

$= \frac{1}{2} \times 6 \times 24 = 72m^2$.

$\frac{1}{2}$ d= 72 d= 12m.

Model 5

1 1. c 2. b 3. b 4. c 5. b
6. c 7. d 8. b 9. b

2 1. $\because \overline{AD} // \overline{EF}$

$\therefore a(\Delta DEF) = a(\Delta AEF) \longrightarrow ①$

$\overline{EF} // \overline{CB}$

$\therefore a(\Delta CEF) = a(\Delta BEF) \longrightarrow ②$

by adding ① , ②

a(Δ DEF) + a(Δ CEF)

= a(Δ AEF) + a(Δ BEF)

$\therefore$ a(Δ CED) = a(Δ AEB)

2. $\because \overline{AD} // \overline{BC}$

$\therefore a(\Delta ABM) = a(\Delta CDM) \longrightarrow ①$

$\because \overline{ME}$ is medim of Δ EMC

$\therefore a(\Delta EMD) = a(\Delta DMC) \longrightarrow ②$

from ① , ②

$\therefore a(\Delta EMD) = a(\Delta AMB)$

3. $\because$ a(figure ABCD) = a(figure ABCE)

by subtract area of Δ ACB

$\therefore a(\Delta ACD) = a(\Delta ACE)$

Wth common base $\overline{AC}$. $\therefore \overline{ED} // \overline{AC}$

4. In ΔΔ AED , CEB

m(∠ A)= m(∠ C). Alternats

m(∠ D)= m(∠ B). Alternats

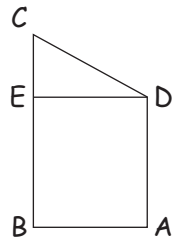
$\therefore$ Δ AED ~ Δ CEB

The perimeter of Δ AED= 9cm.

$\frac{P_1}{P_2} = \frac{4}{8} = \frac{1}{2}$

The perimeter of Δ EBC= 2 × 9= 18cm.

5. ⓐ The projection of $\overline{CD}$ in $\overleftrightarrow{BC}$ is $\overline{CE}$.



CE= 15 – 9= 6cm.

ⓑ The projection.

$\overline{DC}$ on $\overleftrightarrow{AB}$ is $\overline{BA}$

DE= $\sqrt{(10)^2 - (6)^2}$ = 8cm.

∴ AB = 8 cm.

6. $(AC)^2 = CD \times CB = 16 \times 25$

AC= 4 × 5= 20 cm.

$(AD)^2 = 9 \times 16$

AD = 3 × 4= 12cm.

7. $(AB)^2 = 49$ $(BC)^2 = 9$

$(AC)^2 = 25$

$(AB)^2 > (BC)^2 + (AC)^2$

∴ Δ ABC is obtuse triangle at C.

امتحانات رقم (3)

الترم الثانى

GEOMETRY – MODEL NO 1

[Q1] *Choose the correct answer:*

(1) If area of rhombus 40 cm^2, one of its diagonals 10 cm, then the length of other diagonal ..... cm

a) 5 **b)** 6 **c)** 8 **d)** 10

(2) If the area of square 50 cm^2, then length of its diagonal ..... cm

a) 5 **b)** 10 **c)** 25 **d)** 100

(3) In Δ ABC, if $(AB)^2 - (BC)^2 = (AC)^2$, then m ($\angle$ B) .....□

a) Acute **b)** Right **c)** Obtuse **d)** Straight

(4) If area of triangle 30 cm^2, its height 5 cm, then its base ..... Cm

a) 6 **b)** 12 **c)** 18 **d)** 5

(5) Projection of point (5 , 3) on X – axis is .....

a) (5 , 3) **b)** (– 5 , 3) **c)** (5 , 0) **d)** (0 , 3)

(6) If the drawing scale of two similar triangles 1 : 2 and measure of one of angles of smaller triangle is 50°, then the measure of corresponding angles in greater triangle equals .....°

a) 25 **b)** 50 **c)** 100 **d)** 150

[Q2] Complete each of the following:

6) Area of Parallelogram 30 cm^2, its base 6 cm, its height .....

7) In Δ ABC right at A, $\overline{AD} \perp \overline{BC}$, then AB × ..... = BC × .....

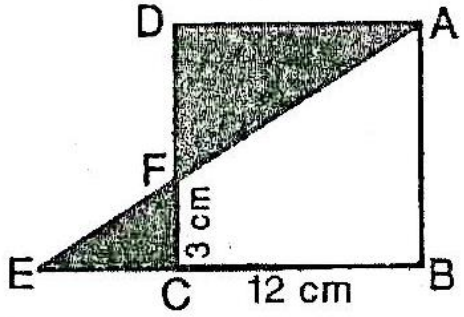
8) Area of Parallelogram equal ..... Area of triangle with common base and between two parallel lines one of them carrying this base

9) Two triangles area similar if their corresponding sides are .....

10) The median of triangle divide it into two triangles .....

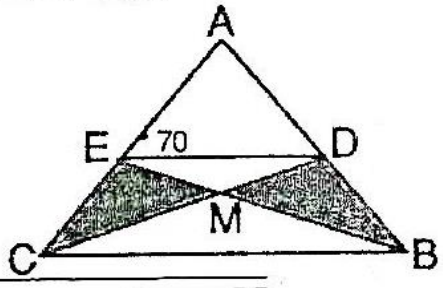
[Q3] A) In the opposite figure:

ABCD is square of side 12 cm,
CF = 3 cm, $\overline{AE} \cap \overline{CD}$ = {F}
① Prove that: Δ ADF ≃ ECF
② Find length of $\overline{EC}$



B) In the opposite figure:

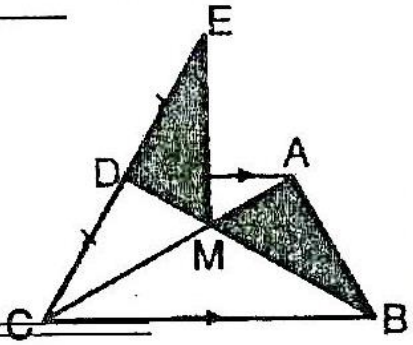
If area of Δ DBM = area of Δ CME
And m (∠ AED) = 70°
Find m (∠ ACB)



[Q4] A) The ratio between two parallel bases in a trapezium 2 : 3, and length of its middle base 30 cm, find:
① Length of its bases
② Area of trapezium if its height 24 cm

B) In the opposite figure:

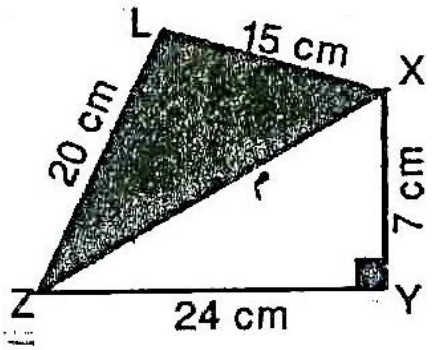
$\overline{AD}$ // $\overline{BC}$, D midpoint of $\overline{BC}$
Prove that:
Area of Δ ABM = area of Δ DME



[Q5] A) Determine the type of triangle according to its angles if its sides lengths are AB = 8 cm, AC = 6 cm, BC = 7 cm

B) In the opposite figure:

M (∠ XYZ) = 90°, $\overline{LM} \perp \overline{XZ}$, XL = 15 cm
ZL = 20 cm, XY = 7 cm, YZ = 24 cm
① Prove that: m (∠ XLZ) = 90°
② Find length of $\overline{LM}$, $\overline{XM}$



End of the questions

GEOMETRY – MODEL NO 2

[Q1] *Choose the correct answer:*

(1) The diagonal of square whose area 50 cm^2 is ..... Cm

a) 10 **b)** 20 **c)** 30 **d)** 40

(2) If the ratio between two similar triangles 1 : 3 and length of sides of greater triangle is 12 cm, then the length of corresponding side in smaller triangle equals ..... cm

a) 4 **b)** 6 **c)** 12 **d)** 24

(3) In Δ ABC, $(AB)^2 - (BC)^2 > (AC)^2$, then $\angle$ B .....

a) Acute **b)** Right **c)** Obtuse **d)** Straight

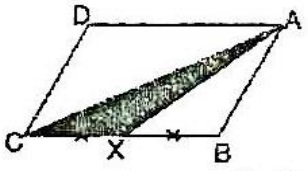
(4) Length of two parallel bases in trapezium 10 cm , 6 cm, its height 5 cm, then its area = ... cm^2

a) 10 **b)** 30 **c)** 40 **d)** 80

(5) If area of rhombus 48 cm^2, length of one of its diagonals 12 cm, then length of other diagonal is ..... Cm

a) 4 **b)** 8 **c)** 10 **d)** 16

(6) In the opposite figure:
BX = XC
Area of Δ AXC = ... area of ABCD



a) $\frac{1}{2}$ **b)** $\frac{1}{4}$ **c)** $\frac{1}{8}$ **d)** 2

[Q2] Complete each of the following:

6) Length of projection of line segment on straight line parallel to it ..... Length of line segment

7) Two similar polygons two third are .....

8) Two triangles on same base and its vertices on straight line parallel to base are .....

9) Projection of point (5 , 3) on y axis is point .....

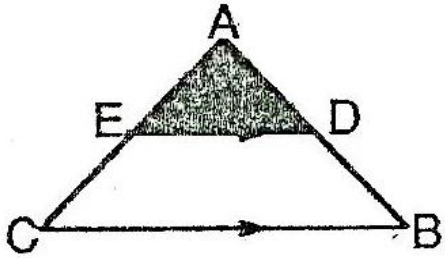
10) Two diagonals of an isosceles trapezium are .....

[Q3] A) In the opposite figure:

$\overline{DE}$ // $\overline{BC}$, DE = 6 cm, AD : AB = 1 : 3

① Prove that: Δ ADE ≃ Δ ABC

② Find length of $\overline{BC}$

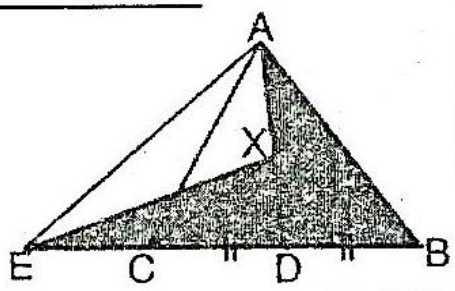


B) In the opposite figure:

Area of Δ ADB = area of Δ XDE

And DB = DC,

Prove that: XC // AE

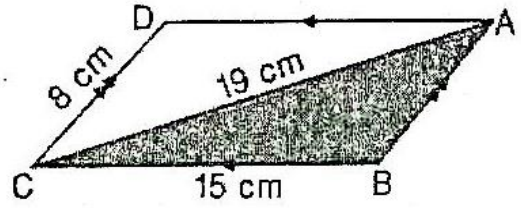


[Q4] A) In the opposite figure:

ABCD is Parallelogram,

BC = 15 cm, DC = 8 cm, AC = 19 cm

Prove that: ∠ ABC is obtuse angle

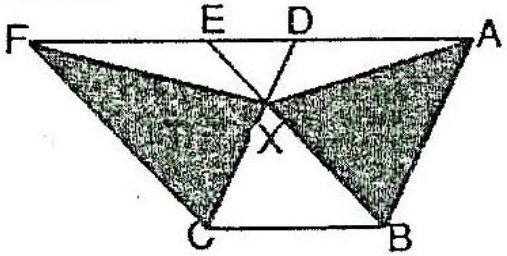


B) In the opposite figure:

ABCD is Parallelogram

Prove that:

Area of Δ AXB = area of Δ XCF



[Q5] A) Find the area of rhombus whose perimeter 60 cm and measure of one of its angles is 60°

B) In the opposite figure:

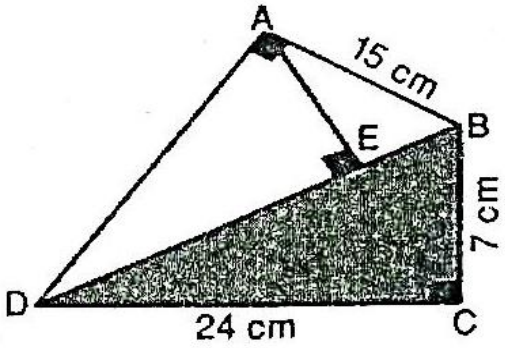
ABCD is quadrilateral, $\overline{AE} \perp \overline{BD}$

m (∠ BCD) = m (∠BAD) = 90°, **Find:**

① Length of $\overline{AD}$, $\overline{BD}$

② Length of projection of $\overline{AB}$ on $\overline{BD}$

③ Length of projection of $\overline{AD}$ on $\overline{AE}$



End of the questions

GEOMETRY – MODEL NO 3

[Q1] *Choose the correct answer:*

(1) Perimeter of rhombus of diagonals 12 cm , 16 cm is .....cm

a) 10 **b)** 40 **c)** 96 **d)** 192

(2) Length of projection of line segment on straight line parallel to it ..... length of original line segment.

a) > **b)** = **c)** < **d)** ≤

(3) Area of rectangle whose sides 8 cm , 4 cm = ...cm^2

a) 16 **b)** 24 **c)** 32 **d)** 64

(4) Sum of interior angles of quadrilateral = ...°

a) 180 **b)** 360 **c)** 540 **d)** 720

(5) Measure of exterior angle of an equilateral triangle = ...°

a) 60 **b)** 120 **c)** 180 **d)** 360

(6) Area of square whose perimeter 12 cm is .....cm^2

a) 72 **b)** 144 **c)** 3 **d)** 9

[Q2] Complete each of the following:

6) The triangles with equal bases and lay on same straight line and have common vertex are .....

7) In Δ ABC, AB = 8 cm, BC = 5 cm, AC = 4 cm, then Δ ABC is .....

8) If the length of two adjacent sides in Parallelogram are 5 cm , 9 cm, and its smaller height is 7 cm, then its area .....cm^2

9) Two triangles are similar if their corresponding sides are.....

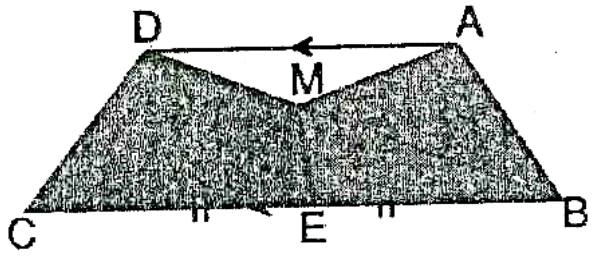
10) The area of a square formed on one of the right sides of a right–angled triangle is equal to the area of the rectangle whose dimensions project of this side on hypotenuse and the length of .....

[Q3] A) In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, E is midpoint of $\overline{BC}$

Prove that:

Area of ABEM = area of DCEM

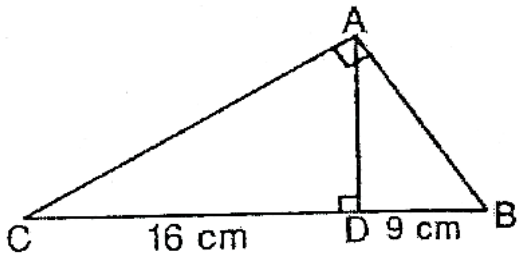


B) In the opposite figure:

Δ ABC right at A, $\overline{AD} \perp \overline{BC}$

BD = 9 cm , CD = 16 cm

Find length of $\overline{AB}$

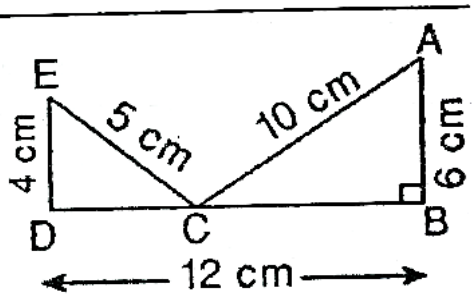


[Q4] A) In the opposite figure:

m (∠ B) = 90°, AB = 6 cm, AC = 10 cm

ED = 4 cm, EC = 5 cm, BC = 12 cm

Prove that: m (∠ D) = 90°



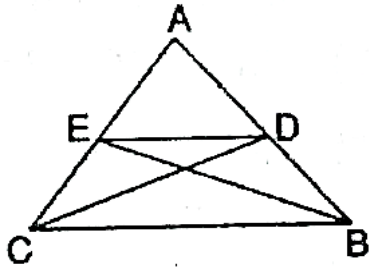
B) Two similar triangles, perimeter of the first 54 cm, lengths of sides of other triangle 5 , 6 , 7 cm, find the sides lengths of first triangle

[Q5] A) In the opposite figure:

Area of Δ ABE = area of Δ ACD

Prove that:

$\overline{DE}$ // $\overline{BC}$



B) Find the middle base of a trapezium whose area 110 cm^2 and its height 10 cm.

End of the questions

GEOMETRY – MODEL NO 4

[Q1] *Choose the correct answer:*

(1) Area of square whose side 12 cm is .....cm^2

a) 36 **b)** 48 **c)** 72 **d)** 144

(2) In Δ ABC, if $\overline{AD} \perp \overline{BC}$, then projection of point A on $\overleftrightarrow{BC}$ is .....

a) { D } **b)** $\overline{BD}$ **c)** $\overline{CD}$ **d)** $\overline{BC}$

(3) Measure of exterior angle o equilateral triangle is .....°

a) 30 **b)** 60 **c)** 120 **d)** 360

(4) The triangle of sides 5 cm , 8 cm , 12 cm is .....triangle

a) Right **b)** Acute **c)** Obtuse **d)** Isosceles

(5) In Δ ABC: $(AB)^2 = (BC)^2 + (AC)^2 + 5$, then m (∠C) .....90°

a) > **b)** = **c)** < **d)** ≤

(6) The area of rhombus 100 cm^2, its diagonal 10 cm, the other diagonal is ..... cm

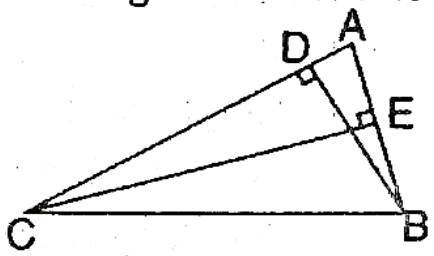
a) 2 **b)** 5 **c)** 10 **d)** 20

[Q2] Complete each of the following:

6) If the ratio between two similar triangles 2 : 3 and measure of one angle smaller triangle is 20°, then the measure of corresponding angle in greater triangle equals ..... °

7) Area of Parallelogram equals ..... area of triangle with common base and lies between two parallel lines

8) In the opposite figure:
AB = 5 cm , AC = 10 cm
EC = 8 cm, then BD = ... cm



9) Sum of measures of two complementary angles is .....

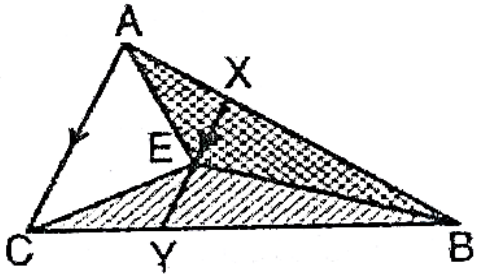
10) Two triangles are similar if their corresponding sides are .....

[Q3] A) In the opposite figure:

$\overline{AC}$ // $\overline{XY}$, F midpoint of $\overline{XY}$

Prove that:

Area of Δ ABF = area of Δ CBF



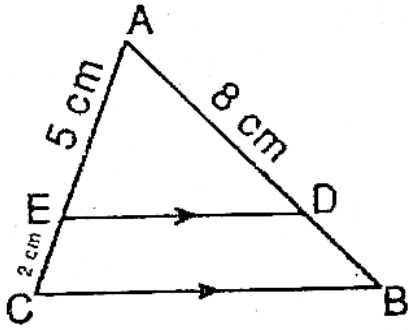
B) In the opposite figure:

DE // BC , AE = 5 cm

EC = 2 cm, AD = 8 cm

① Prove that: Δ ABC ≃ ADE

② Find length of $\overline{BD}$



[Q4] A) Area of trapezium 180 cm^2, its height 12 cm, ratio between its two parallel bases 3 : 2, find length of each one

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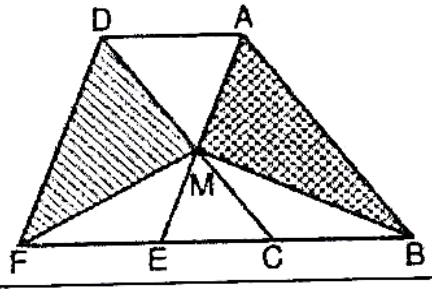
B) In the opposite figure:

ABCD, AEFD are two Parallelograms

Prove that:

Area of Δ ABM = area of Δ DFM



[Q5] In the opposite figure:

ABCD is quadrilateral, m (∠ B) = 90°

$\overline{DE} \perp \overline{AC}$, AB = 7 cm, BC = 24 cm

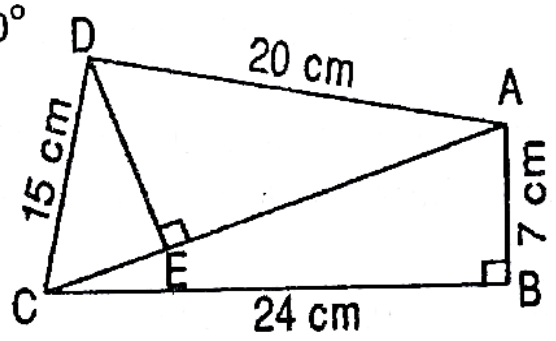
CD = 15 cm, DA = 20 cm

Find:

① Length of $\overline{AC}$

② Prove that m (∠ ADC) = 90°

③ Find length of projection of $\overline{DC}$ on $\overleftrightarrow{AC}$



End of the questions

GEOMETRY – MODEL No 5

[Q1] Complete each of the following:

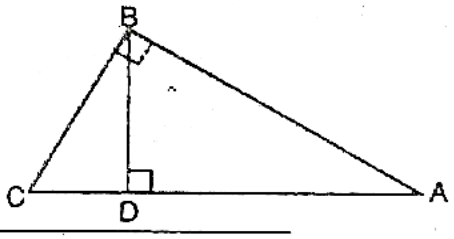
6) The area of rhombus 48 cm^2, its diagonal 12 cm, the other diagonal is ..... cm

7) In Δ ABC, AB = 5 cm, BC = 7 cm, CA = 11 cm, then m ($\angle$B) = ...

8) Two similar triangles, sides of first one 4 , 6 , 8 cm, perimeter of the other 72 cm, then the sides of the other ....., ..., ... cm

9) The median of triangle divide it into two triangles .....

10) In the opposite figure:
Δ ABC, m ($\angle$ABC) =90°, $\overline{BD} \perp \overline{AC}$
① Then projection of $\overline{AB}$ on $\overline{AC}$ is .....
② $(BC)^2$ = ... × .....



[Q2] *Choose the correct answer:*

(1) Area of triangle 24 cm^2, its height 8 cm, then its base .....cm
a) 2 **b)** 3 **c)** 6 **d)** 16

(2) ABCD is a Parallelogram, E ∈ D, area of Δ AEB = 20 cm^2, then area of Parallelogram ABCD = ...cm^2
a) 10 **b)** 20 **c)** 30 **d)** 40

(3) A trapezium length of its parallel bases 5 cm , 7 cm, its area 42 cm, then its height = ... cm
a) 5 **b)** 6 **c)** 7 **d)** 12

(4) In Δ ABC, AB = 7 cm , BC = 5 cm , AC = 4 cm, then $\angle$ C .....
a) Acute **b)** Obtuse **c)** Right **d)** Straight

(5) If length of rectangle 12 cm , its diagonal 13 cm, the its area .....
a) 144 cm^2 **b)** 169 cm^2 **c)** 156 cm^2 **d)** 60 cm^2

[Q3] A) In the opposite figure:

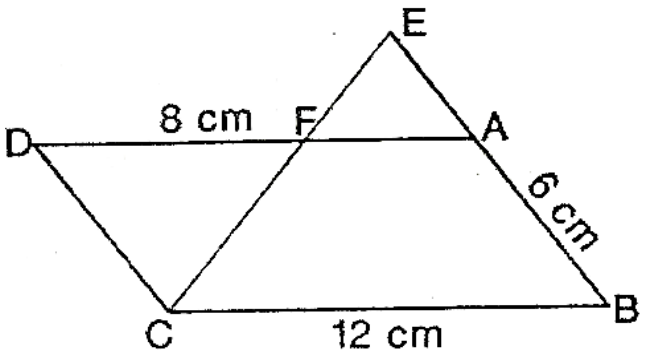
ABCD is Parallelogram, E $\in \overrightarrow{BA}$

$\overline{CE} \cap \overline{AD}$ = { F }, BC = 12 cm,

AB = 6 cm, FD = 8 cm, FC = 7 cm

① Prove that: Δ AEF $\simeq \Delta$ DCF

② Find length of $\overline{EB}$, $\overline{EF}$

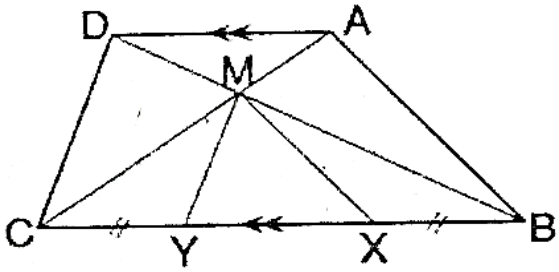


B) In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, $\overline{AC} \cap \overline{BD}$ = { M },

X,Y $\in \overline{BC}$, BX = CY, prove that:

Area of ABXM = area of DCYM



[Q4] A) ABCD is a Parallelogram, AB = 8 cm, AC = 20 cm, BD = 12 cm,

① Prove that m ($\angle$ ABD) = 90°

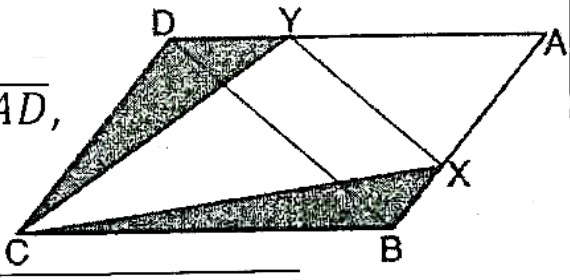
② Find area of Parallelogram ABCD

B) In the opposite figure:

ABCD is Parallelogram, X $\in \overline{AB}$, Y $\in \overline{AD}$,

Area of Δ BCX = area of Δ CYD

Prove that: $\overline{XY}$ // $\overline{BD}$



[Q5] In the opposite figure:

ABCD is quadrilateral,

m ($\angle$ BCD) = m($\angle$BAD) = 90°

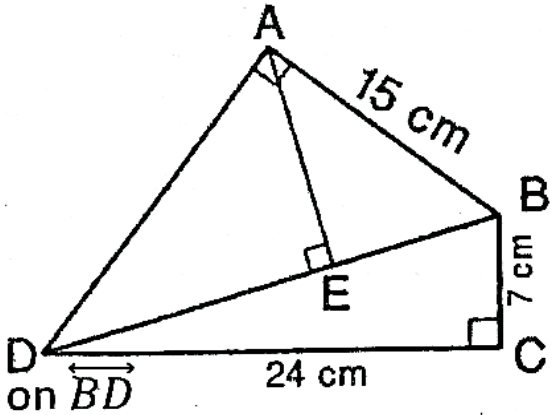
$\overline{AE} \perp \overline{BD}$, BC = 7 cm, CD = 24 cm

AB = 15 cm, Find:

① Length of $\overline{BD}$, $\overline{AD}$

② Find length of projection of $\overline{AB}$ on $\overleftrightarrow{BD}$

③ Find length of projection of $\overline{AD}$ on $\overleftrightarrow{AE}$



End of the questions

GEOMETRY – MODEL NO 6

[Q1] Choose the correct answer:

(1) The area of square whose diagonal 8 cm is ..... cm^2

a) 128 **b)** 64 **c)** 32 **d)** 16

(2) The side lengths 4 cm , 5 cm , 3 cm are sides of ..... triangle

a) Isosceles **b)** Acute **c)** Right **d)** Obtuse

(3) If the projection of line segment on a straight line is a point, then the line segment ..... on straight line

a) Parallel **b)** Perpendicular **c)** Coincide **d)** bisects

(4) If the area of a rhombus is 40 cm^2, and length of one of its diagonals is 10 cm, then the other diagonal is ..... cm

a) 80 **b)** 50 **c)** 4 **d)** 8

(5) The area of rectangle whose dimensions 4 cm , 9 cm ..... the area of rhombus whose diagonals 12 cm , 5 cm

a) > **b)** = **c)** < **d)** $\leq$

(6) The ratio between corresponding sides in two similar polygons is 1 : 3, if the perimeter of the smallest one 15 cm, then the perimeter of the greater polygon is ..... cm

a) 5 **b)** 45 **c)** 60 **d)** 75

[Q2] Complete each of the following:

6) XYZL is a parallelogram, area of Δ XYZ = 18 cm^2, then the area of parallelogram XYZL equals ..... cm^2

7) In Δ ABC, if (AB –AC) (AB + AC) < $(BC)^2$, then $\angle$ C is .....

8) Two parallel straight lines to third are .....

9) Number of axes of symmetry of an equilateral triangle is .....

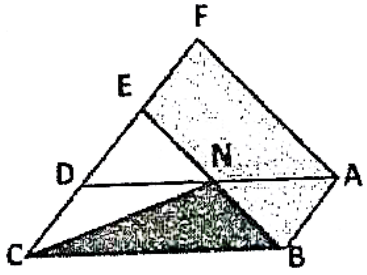
10) If two triangles drawn on same base are equal in area, then its vertices on the straight line .....

[Q3] A) In the opposite figure:

ABCD, ABEF are two parallelograms

Prove that:

Area of Δ NBC = area Parallelogram of ABEF



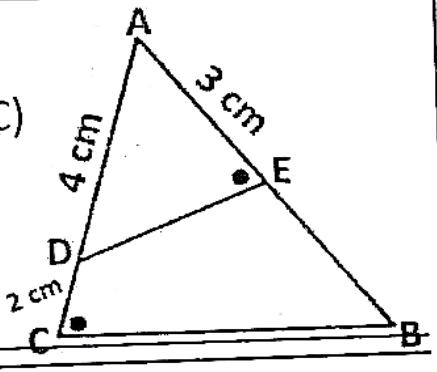
B) In the opposite figure:

Δ ABC, D ∈ $\overline{AC}$. E ∈ $\overline{AB}$, m (∠AED) = m (∠C)

AE = 3 cm, AD = 4 cm, CD = 2 cm

① Prove that: Δ ABC ~ Δ AED

② Find the length of $\overline{EB}$



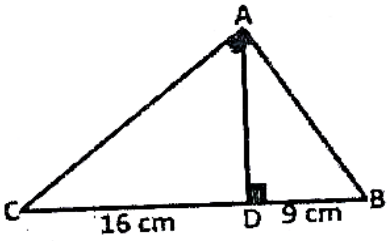
[Q4] A) A trapezium of area 180 cm^2, its height 12 cm, the ratio between length of its bases 3 : 2. Find length of its bases.

B) In the opposite figure:

Δ ABC if right triangle at A,

$\overline{AD} \perp \overline{BC}$, BD = 9 cm,

CD = 16 cm, find length of $\overline{AD}$, $\overline{AB}$, $\overline{AC}$



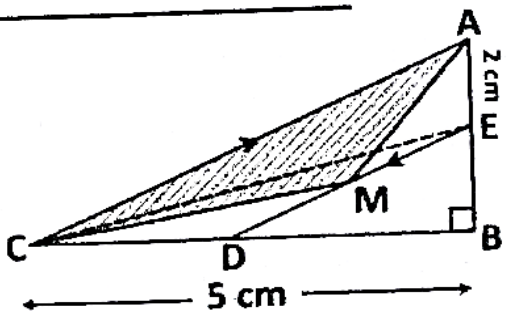
[Q5] A) Δ XYZ, XY = 12 cm , YZ = 20 cm , XZ = 16 cm, determine the type of triangle according to its angles

B) In the opposite figure:

Δ ABC right at B, $\overline{ED}$ // $\overline{AC}$

AE = 2 cm , BC = 5 cm

Find area of Δ AMB



End of the questions

GEOMETRY – MODEL NO 7

[Q1] *Choose the correct answer:*

(1) The area of rhombus whose diagonals 10 cm , 12 cm is ..... cm^2

a) 240 **b)** 120 **c)** 60 **d)** 30

(2) In Δ ABC, $(AC)^2 = (AB - BC)(AB + BC)$, then m $(\angle B)$ .....90°

a) > **b)** $\geq$ **c)** = **d)** <

(3) Two perpendicular straight line on third are .....

a) Parallel **b)** Perpendicular **c)** Coincide **d)** Intersecting

(4) The length of diagonal of square whose area 50 cm^2 is ..... cm

a) 100 **b)** 20 **c)** 10 **d)** 5

(5) Length of projection of line segment on straight line parallel to it ..... length of line segment.

a) > **b)** = **c)** < **d)** $\leq$

(6) If ABCD $\simeq$ XYZL, $m(\angle A) = 80^\circ$, $m(\angle Z) = 50^\circ$, $m(\angle D) = 120^\circ$, then $m(\angle B)$ = ...$^\circ$

a) 90 **b)** 110 **c)** 130 **d)** 250

[Q2] Complete each of the following:

6) If Δ ABC $\simeq \Delta$ XYZ, and AB : XY = 2 : 5, AC = 8 cm, then XY = ... cm

7) Area of square of side length 8 cm = ... cm^2

8) In Δ ABC, D is midpoint of BC, Area of Δ ABD = 20 cm^2, then area of Δ ABC = ... cm^2

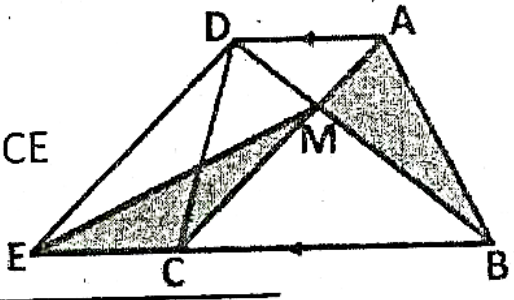
9) If the ratio of enlargement for two similar triangles equal one, then the two triangle are .....

10) The isosceles triangle has ..... Axes of symmetry

[Q3] A) In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, area of Δ ABM = area of Δ MCE

Prove that: $\overline{AC}$ // $\overline{DE}$

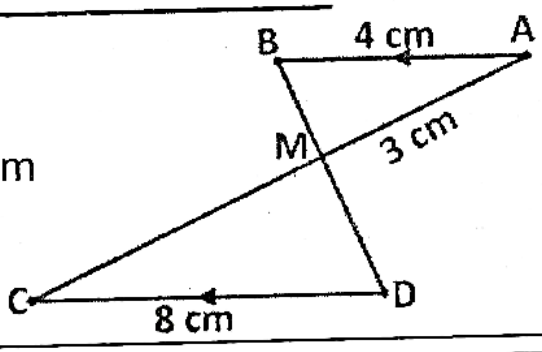


B) In the opposite figure:

$\overline{AB}$ // $\overline{DC}$, $\overline{AC} \cap \overline{BD}$ = {M}, AB = 4 cm

MA = 3 cm, DC = 8 cm

Prove that: Δ MAB ≃ Δ MCD



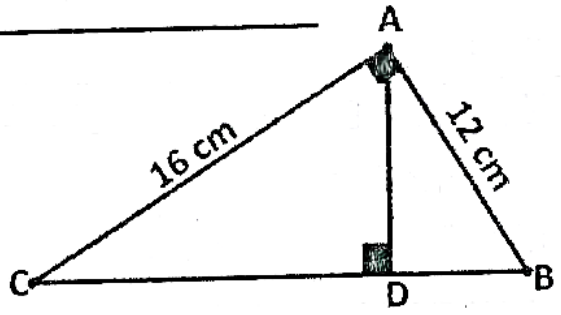
[Q4] A) The area of trapezium is 80 cm^2, its height 8 cm, length of one of its parallel bases is 15 cm, find the length of other base.

B) In the opposite figure:

Δ ABC right at ∠ BAC, $\overline{AD} \perp \overline{BC}$,

AB = 12 cm, AC = 16 cm

Find length of $\overline{BC}$, $\overline{AD}$



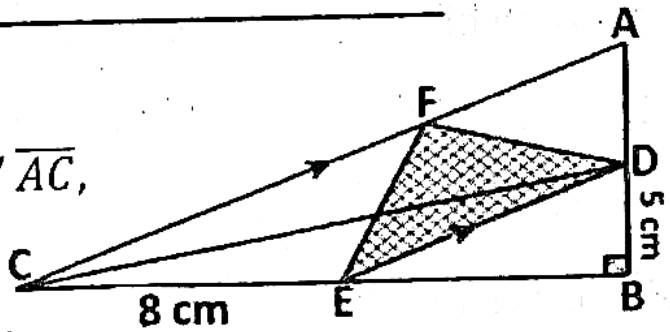
[Q5] A) In Δ LMN, LM = 5 cm, MN = 7 cm , LN = 6 cm, determine the type of triangle according to its angles

B) In the opposite figure:

Δ ABC is right at (∠ B), $\overline{DE}$ // $\overline{AC}$,

DB = 5 cm , EC = 8 cm

↳ Find the area of Δ FDE



End of the questions

GEOMETRY – MODEL NO 8

[Q1] *Choose the correct answer:*

(1) The two triangle are equal in area and drawn in same base in one side of it, then their vertices on straight line ..... base

a) Perpendicular **b)** Bisects **c)** Parallel **d)** Transversal

(2) The area of triangle whose base 8 cm and its corresponding height 5 cm = ...cm^2

a) 80 **b)** 40 **c)** 20 **d)** 10

(3) The angles of two similar polygons are ..... measure

a) Equal **b)** Different **c)** Proportional **d)** Alternative

(4) .....is a parallelogram with perpendicular diagonal

a) Square **b)** Rectangle **c)** Rhombus d) Trapezium

(5) The two base angle of an isosceles triangle are .....

a) Complementary **b)** Supplementary **c)** Adjacent **d)** Congruent

(6) The area of square whose diagonal 8 cm equal ..... Cm^2

a) ..... **b)** ..... **c)** ..... **d)** .....

[Q2] Complete each of the following:

6) The area of rhombus equals half product of .....

7) In Δ XYZ, $(XY)^2 = (YZ)^2 - (XY)^2$, then m ($\angle$ .....) = 90°

8) If A $\in$ straight line L, then projection of A on L is .....

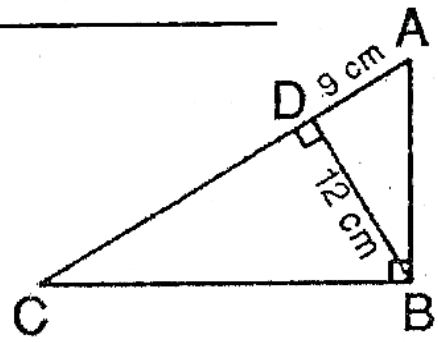
9) Δ ABC $\simeq$ Δ XYZ, and AB = 5 cm , XY = 3 cm
Then perimeter of Δ ABC : perimeter of Δ XYZ = ... : ....

10) The lengths of two parallel bases in trapezium are 10 cm, 6 cm, then the length of its middle base is ..... c m

[Q3] A) Find the height of rhombus whose area 96 cm^2 and lengths of its diagonals 12 cm, 16 cm

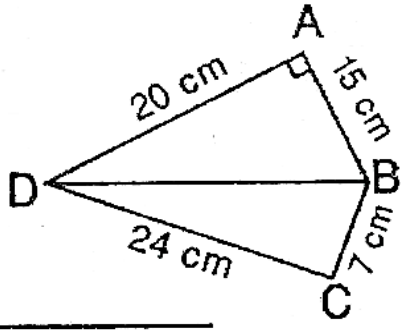
B) In the opposite figure:

Δ ABC right at B, $\overline{BD} \perp \overline{AC}$,
If BD = 12 cm, AD = 9 cm
Find length of $\overline{DC}$



[Q4] A) In the opposite figure:

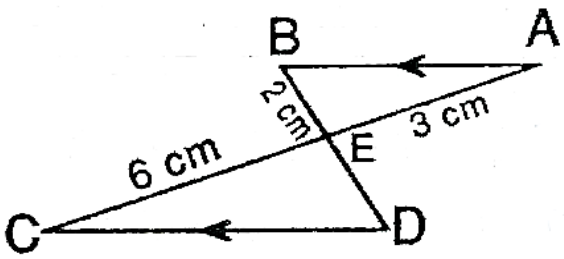
m ($\angle$ A) = 90°, AB = 15 cm , AD = 20 cm
BC = 7 cm, CD = 24 cm
Prove that: m ($\angle$ C) = 90°



B) Find the area of trapezium with two parallel bases 8 cm, 10 cm and its height 6 cm

[Q5] A) In the opposite figure:

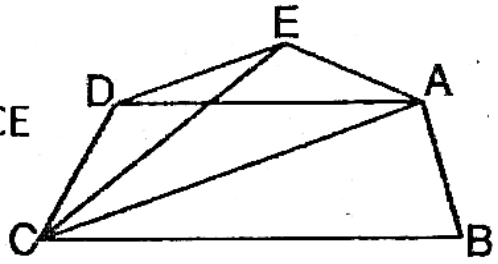
$\overline{AB}$ // $\overline{CD}$, $\overline{AC} \cap \overline{BD}$ = { E }
AE = 3 cm, BE = 2 cm, CE = 6 cm
① Prove that: Δ ABE $\simeq$ Δ CDE
② Find the length of $\overline{ED}$



B) In the opposite figure:

Area of figure ABCD = area of figure ABCE

Prove that: $\overline{AC}$ // $\overline{ED}$



End of the questions

GEOMETRY – MODEL NO 9

[Q1] *Choose the correct answer:*

(1) Area of square of diagonal 10 cm is ..... Cm^2

a) 100 **b)** 50 **c)** 40 **d)** 20

(2) In Δ ABC, $(AC)^2 = (AB)^2 + (BC)^2 + 9$, then m ($\angle$B) .....$90^\circ$

a) > **b)** = **c)** < **d)** $\leq$

(3) In Δ ABC, $\overline{AD} \perp \overline{BC}$, then projection of $\overline{AD}$ on $\overleftrightarrow{BC}$ is .....

a) $\overline{BD}$ **b)** $\overline{CD}$ **c)** $\overline{BC}$ **d)** { D }

(4) The area of rhombus 42 cm^2 and one of its diagonals 12 cm, then the other diagonal is .....

a) 14 **b)** 7 **c)** 3.5 **d)** 2

(5) In a Parallelogram, length of two adjacent sides 7 cm , 9 cm and smaller height 4 cm, then its area ..... cm^2

a) 14 **b)** 18 **c)** 28 **d)** 36

(6) In Δ ABC right at B, m ($\angle$C) = 30°, AB = 5 cm, then AC = ... cm

a) 5 **b)** $5\sqrt{3}$ **c)** 10 **d)** 15

[Q2] Complete each of the following:

6) If the drawing scale of two similar triangles 2 : 3 and measure of one of angles of smaller triangle is 80°, then the measure of corresponding angles in greater triangle equals .....$^\circ$

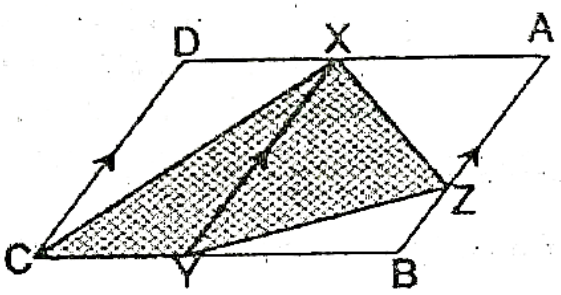
7) The measure of two supplementary angles is .....$^\circ$

8) If Δ ABC $\simeq \Delta$ XYZ and m($\angle$B) = 30°, m($\angle$Z) = 50°, then m ($\angle$X) =..

9) Length of projection of line segment on straight line parallel to it ..... Length of line segment

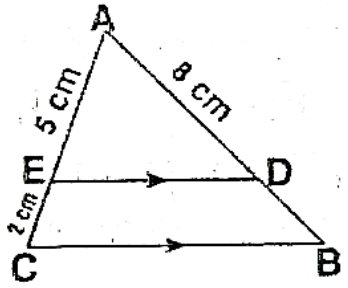
10) If a straight line cut two parallel lines, then each two alternative angles are .....

[Q3] A) In the opposite figure:



ABCD is a Parallelogram,
And $\overline{XY}$ // $\overline{AB}$ // $\overline{DC}$
Prove that:
Area of figure XZYC = $\frac{1}{2}$ area of Parallelogram ABCD

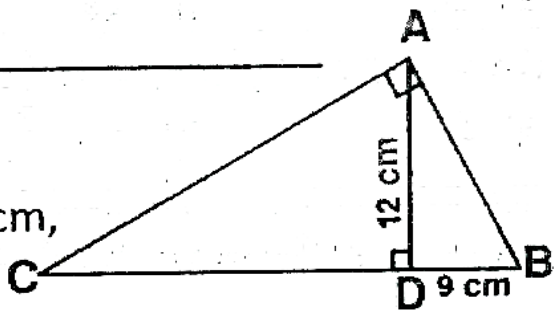
B) In the opposite figure:



$\overline{DE}$ // $\overline{BC}$, AE = 5 cm , EC = 2 cm
AD = 8 cm, prove that: Δ ABC ≃ ADE
Then find the length of $\overline{BD}$

[Q4] A) Find the height of a trapezium whose middle base 12 cm and its surface area 60 cm^2, if one of its bases is twice the other, find length of each one?

B) In the opposite figure:



Δ ABC right at B, $\overline{AD} \perp \overline{BC}$, AD = 12 cm,
BD = 9 cm, Find length of $\overline{DC}$, $\overline{AC}$

[Q5] A) Determine the type of triangle according to its angles if its sides lengths are AB = 10 cm, AC = 6 cm, BC = 8 cm

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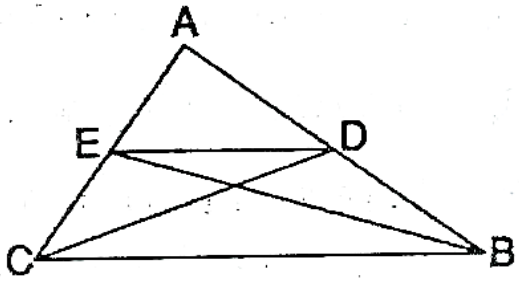
B) In the opposite figure:



Area of Δ ABE = area of Δ ADC

Prove that: $\overline{DE}$ // $\overline{BC}$

End of the questions

GEOMETRY – MODEL NO 10

[Q1] *Choose the correct answer:*

(1) Area of triangle equal ..... Area of Parallelogram with common base and between two parallel lines one of them carrying this base

a) Same **b)** Half **c)** Double **d)** Quarter

(2) The height of triangle whose area 36 cm^2 and its base 9 cm is..

a) 2 cm **b)** 4 cm **c)** 8 cm **d)** 12 cm

(3) Length of projection of line segment on straight line parallel to it ..... Length of line segment

a) > **b)** = **c)** < **d)** ≤

(4) Area of square whose diagonal 6 cm is ..... cm^2

a) 12 **b)** 18 **c)** 36 **d)** 72

(5) Sum of interior angles of triangle is .....°

a) 180 **b)** 360 **c)** 540 **d)** 720

(6) An isosceles triangle has .....axes of symmetry

a) Zero **b)** One **c)** Two **d)** Three

[Q2] Complete each of the following:

6) The median of triangle divide it into two triangles .....

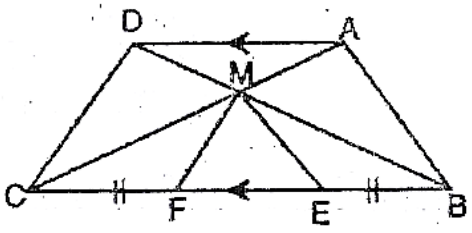
7) Δ ABC, AB = 8 cm, BC = 6cm, AC = 10 cm, type of ∠A is.....

8) The base of Parallelogram whose area 42 cm^2 and its height 6cm is .....

9) Two triangles are similar if their angles .....

10) If the ratio of similarity between two triangles equal one, then two triangles are .....

[Q3] A) In the opposite figure:

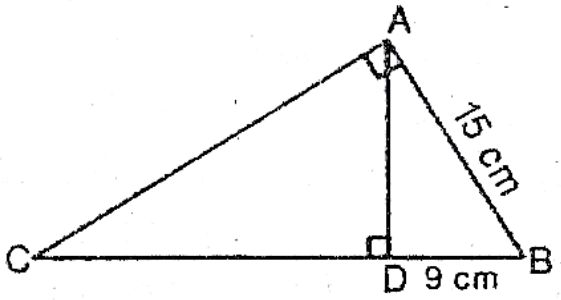


$\overline{AD}$ // $\overline{BC}$, $\overline{BE} = \overline{FC}$

Prove that:

Area of figure ABEM = area of figure DCFM

B) In the opposite figure:

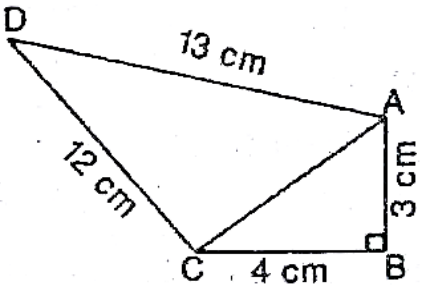


Δ ABC is right at A, $\overline{AD} \perp \overline{BC}$

If AB = 15 cm, BD = 9 cm

Find length of BC

[Q4] A) In the opposite figure:



m (∠B) = 90°, AB = 3 cm, BC = 4 cm

DA = 13 cm, DC = 12 cm

Prove that: m (∠ ACD) = 90°

B) Find height of a trapezium whose area 40 cm^2, and lengths of its two parallel bases are 7 cm , 9 cm

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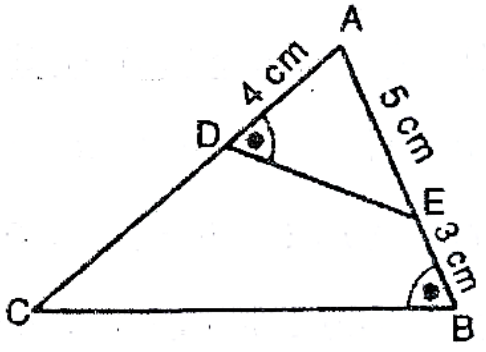
[Q5] A) In the opposite figure:



AE = 5 cm, AD = 4 cm, BE = 3 cm

And m (∠B) = m (∠ADE)

① Prove that: Δ ABC ≃ Δ ADE

② Find length of $\overline{DC}$

B) Find the area of rhombus whose diagonals 8 cm, 6 cm and find length of its height.

End of the questions

GEOMETRY – MODEL NO 1

[Q1] Choose the correct answer:

(1) If area of rhombus 40 cm^2, one of its diagonals 10 cm, then the length of other diagonal ..... cm

a) 5 b) 6 c) 8 d) 10

(2) If the area of square 50 cm^2, then length of its diagonal ..... cm

a) 5 b) 10 c) 25 d) 100

(3) In Δ ABC, if $(AB)^2 - (BC)^2 = (AC)^2$, then m (∠ B) .....□

a) Acute b) Right c) Obtuse d) Straight

(4) If area of triangle 30 cm^2, its height 5 cm, then its base ..... Cm

a) 6 b) 12 c) 18 d) 5

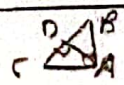
(5) Projection of point (5 , 3) on X – axis is .....

a) (5 , 3) b) (−5 , 3) c) (5 , 0) d) (0 , 3)

(6) If the drawing scale of two similar triangles 1 : 2 and measure of one of angles of smaller triangle is 50°, then the measure of corresponding angles in greater triangle equals .....°

a) 25 b) 50 c) 100 d) 150

[Q2] Complete each of the following:



6) Area of Parallelogram 30 cm^2, its base 6 cm, its height .....5..cm

7) In Δ ABC right at A, $\overline{AD} \perp \overline{BC}$, then AB × AC = BC × AD.....

8) Area of Parallelogram equal ..Twice.... (double) Area of triangle with common base and between two parallel lines one of them carrying this base

9) Two triangles area similar if their corresponding sides are .proportional

10) The median of triangle divide it into two triangles ..Equal in area

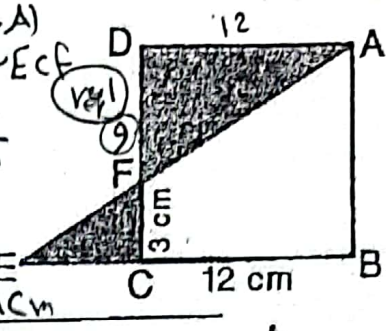
$\angle ECF = 90°$ & $\angle ADF = 90°$
$\angle AFD = \angle EFC$ (V.O.A)

[Q3] A) In the opposite figure:

ABCD is square of side 12 cm, CF = 3 cm, $\overline{AE} \cap \overline{CD} = \{F\}$

① Prove that: $\Delta ADF \simeq ECF$

② Find length of $\overline{EC}$ 4 cm



$\therefore \Delta ADF \sim ECF$

$\frac{EC}{AD} = \frac{FC}{FD}$

$\frac{EC}{12} = \frac{3}{9}$

$= \frac{12 \times 3}{9} = 4$ cm

B) In the opposite figure:

If area of ΔDBM = area of ΔCME

And $m(\angle AED) = 70°$

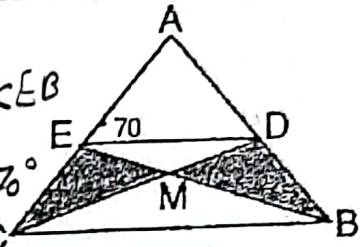
Find $m(\angle ACB)$ 70°

by Adding (BMC)

$\therefore BDM = CEB$

$\therefore ED // CB$

$\therefore AED = ACB = 70°$ Corresponding Angles



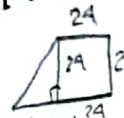
[Q4] A) The ratio between two parallel bases in a trapezium 2 : 3, and length of its middle base 30 cm, find:

① Length of its bases 24 cm , 36 cm

② Area of trapezium if its height 24 cm 720 cm²

2 : 3 : 5

24 : 36 : 60



$24 \times 24 = 576$

$\frac{1}{2} \times 12 \times 24 = 144$ → = 720

B) In the opposite figure:

$\overline{AD} // \overline{BC}$, D midpoint of $\overline{EC}$

Prove that:

Area of ΔABM = area of ΔDME

$\because AD // BC$ and $\Delta\Delta ABC$, DBC same base (BC)

$\therefore$ area $ABC = DBC$

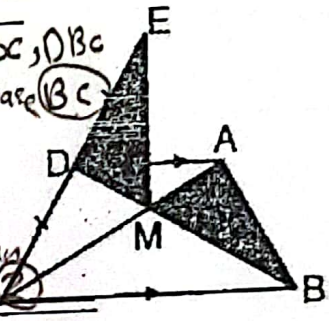
By subtract mBC

$\therefore AMB = DMC \rightarrow (1)$

in ΔEMC MD is median

$\therefore MED = DMC \rightarrow (2)$

From (1) (2)



[Q5] A) Determine the type of triangle according to its angles if its sides lengths are AB = 8 cm, AC = 6 cm, BC = 7 cm

$(8)^2 = 64$

$(7)^2 = 49$

$(AB)^2 < (AC)^2 + (BC)^2$ ∴ Acute

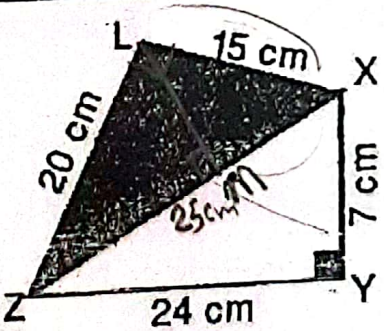
B) In the opposite figure:

M($\angle XYZ$) = 90°, $\overline{LM} \perp \overline{XZ}$, XL = 15 cm

ZL = 20 cm, XY = 7 cm, YZ = 24 cm

✓① Prove that: $m(\angle XLZ) = 90°$

✓② Find length of $\overline{LM}$, $\overline{XM}$ 9 cm



$ZY = 25$ cm

$(ZY)^2 = (LX)^2 + (LZ)^2$

$625 = 400 + 225$

$\therefore (ZX)^2 = (LX)^2 + (LZ)^2$

$\therefore \angle XLZ = 90°$

$LM = \frac{LX \times LZ}{ZX} = 12$

$XM = 9$ cm

End of the questions

GEOMETRY – MODEL NO 2

$A = \frac{1}{2} d^2$

[Q1] Choose the correct answer:

(1) The diagonal of square whose area 50 cm^2 is ..... Cm

a) 10 b) 20 c) 30 d) 40

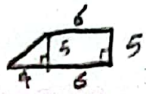
(2) If the ratio between two similar triangles 1 : 3 and length of sides of greater triangle is 12 cm, then the length of corresponding side in smaller triangle equals ..... cm

a) 4 b) 6 c) 12 d) 24

(3) In Δ ABC, $(AB)^2 - (BC)^2 > (AC)^2$, then $\angle$ B .....

a) Acute b) Right c) Obtuse d) Straight

(4) Length of two parallel bases in trapezium 10 cm , 6 cm, its height 5 cm, then its area = ... cm^2



a) 10 b) 30 c) 40 d) 80

(5) if area of rhombus 48 cm^2, length of one of its diagonals 12 cm, then length of other diagonal is ..... Cm

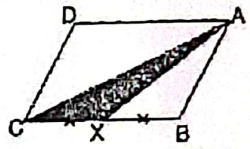
$A = \frac{1}{2} \times d_1 d_2$

a) 4 b) 8 c) 10 d) 16

(6) In the opposite figure:

BX = XC

Area of Δ AXC = ... area of ABCD



a) $\frac{1}{2}$ b) $\frac{1}{4}$ c) $\frac{1}{8}$ d) 2

[Q2] Complete each of the following:

6) Length of projection of line segment on straight line parallel to it Equal to Length of line segment

7) Two similar polygons two third are Similar

8) Two triangles on same base and its vertices on straight line parallel to base are Equal in area

9) Projection of point (5 , 3) on y axis is point (0, 3) or 3

10) Two diagonals of an isosceles trapezium are Equal in Length

∵ ∠A Common

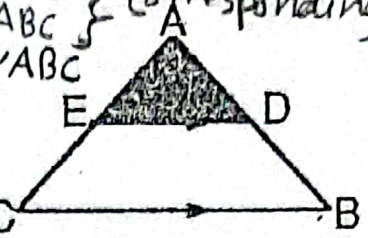
∠AED = ∠ACB, ∠ADE = ABC } Corresponding Angles
∴ ΔADE ~ ABC

[Q3] A) In the opposite figure:

$\overline{DE} \parallel \overline{BC}$, DE = 6 cm, AD : AB = 1 : 3

① Prove that: Δ ADE ≃ Δ ABC

② Find length of $\overline{BC}$ | 8 cm $\frac{6}{BC} = \frac{1}{3}$



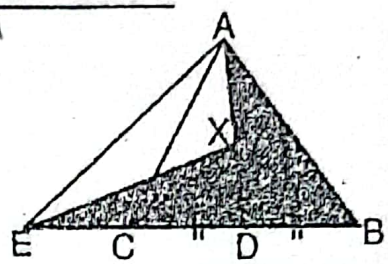
B) In the opposite figure:

AD is median
∴ area ABD = ADC
∴ ADC = XDE
by subtract XDC
∴ Area AXC = EXC
Common base XC
∴ XC // AE

Area of Δ ADB = area of Δ XDE

And DB = DC,

Prove that: XC // AE



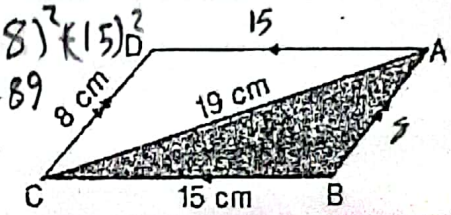
[Q4] A) In the opposite figure:

$(19)^2 > (8)^2 + (15)^2$
361 > 289
∴ B obtuse

ABCD is Parallelogram,

BC = 15 cm, DC = 8 cm, AC = 19 cm

Prove that: ∠ ABC is obtuse angle



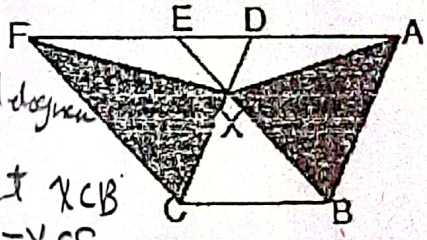
B) In the opposite figure:

E ∈ $\overrightarrow{AB}$
FE // AD
∴ EFCB is Parallelogram

ABCD is Parallelogram

Prove that: Area ABCD = FEBC

Area of Δ AXB = area of Δ XCF Subtract XCB
∴ AXB = XCF



[Q5] A) Find the area of rhombus whose perimeter 60 cm and measure of one of its angles is 60°

$\frac{1}{2} \times 7.5 \times 13 = 48.75$
$48.75 \times 4 = 195 \text{ cm}^2$

B) In the opposite figure:

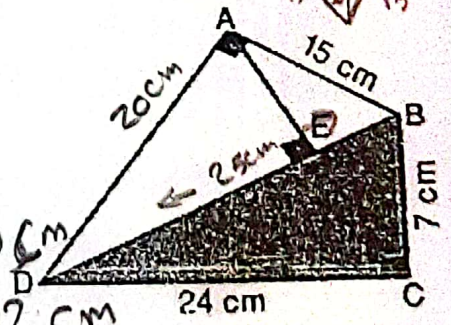
ABCD is quadrilateral, $\overline{AE} \perp \overline{BD}$

m (∠ BCD) = m (∠BAD) = 90°, **Find:**

① Length of $\overline{AD}$, $\overline{BD}$ 20 cm , 25 cm

② Length of projection of $\overline{AB}$ on $\overline{BD}$ 9 cm

③ Length of projection of $\overline{AD}$ on $\overline{AE}$ 12 cm



End of the questions

GEOMETRY – MODEL NO 3

[Q1] Choose the correct answer:

(1) Perimeter of rhombus of diagonals 12 cm , 16 cm is .....cm
a) 10 b) 40 c) 96 d) 192

(2) Length of projection of line segment on straight line parallel to it ..... length of original line segment.
a) > b) = c) < d) ≤

(3) Area of rectangle whose sides 8 cm , 4 cm = ...cm^2
a) 16 b) 24 c) 32 d) 64

(4) Sum of interior angles of quadrilateral = ...°
a) 180 b) 360 c) 540 d) 720

(5) Measure of exterior angle of an equilateral triangle = ...°
a) 60 b) 120 c) 180 d) 360

(6) Area of square whose perimeter 12 cm is .....cm^2
a) 72 b) 144 c) 3 d) 9

[Q2] Complete each of the following:

6) The triangles with equal bases and lay on same straight line and have common vertex are ....equal in area

7) In Δ ABC, AB = 8 cm, BC = 5 cm, AC = 4 cm, then Δ ABC is ....obtuse

8) If the length of two adjacent sides in Parallelogram are 5 cm , 9 cm, and its smaller height is 7 cm, then its area ....63....cm^2

9) Two triangles are similar if their corresponding sides are ....proportional

10) The area of a square formed on one of the right sides of a right–angled triangle is equal to the area of the rectangle whose dimensions project of this side on hypotenuse and the length of ....hypotenuse

$\Delta ABC = \Delta DBC$

In ΔABC, $\overline{ME}$ is median

$\therefore \Delta MBE = \Delta MCE$

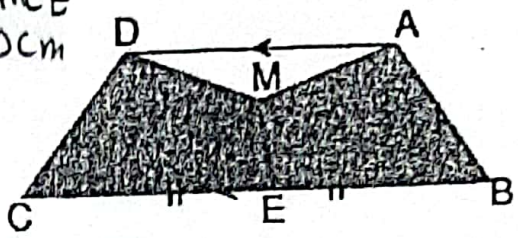
$\therefore ABM = DCM$

[Q3] **A) In the opposite figure:**

$\overline{AD} // \overline{BC}$, E is midpoint of $\overline{BC}$

Prove that:

Area of ABEM = area of DCEM



B) In the opposite figure:

Δ ABC right at A, $\overline{AD} \perp \overline{BC}$

BD = 9 cm , CD = 16 cm

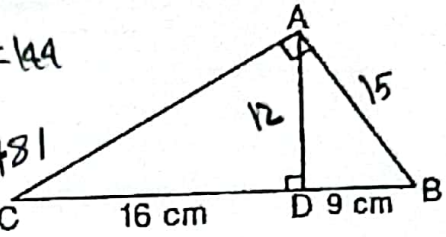
Find length of $\overline{AB}$

$(AD)^2 = 16 \times 9 = 144$

$AD = 12$ cm

$(AB)^2 = 144 + 81$

$AB = 15$ cm

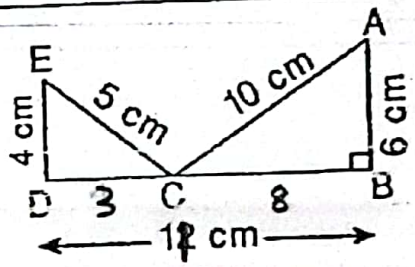


[Q4] **A) In the opposite figure:**

$m(\angle B) = 90°$, AB = 6 cm, AC = 10 cm

ED = 4 cm, EC = 5 cm, BC = 12 cm

Prove that: $m(\angle D) = 90°$



B) Two similar triangles, perimeter of the first 54 cm, lengths of sides of other triangle 5 , 6 , 7 cm, find the sides lengths of first triangle

$\frac{18}{54} = \frac{1}{3}$

1 : 3

5 : 15

6 : 18

7 : 21

15 , 18 , 12

[Q5] **A) In the opposite figure:**

Area of Δ ABE = area of Δ ACD by subtract ΔAED

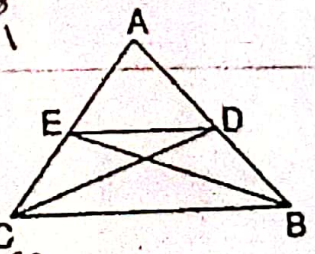
Prove that:

$\overline{DE} // \overline{BC}$

$\therefore BED = \Delta CED$

ED is common base

$\therefore ED // BC$



B) Find the middle base of a trapezium whose area 110 cm^2 and its height 10 cm.

$110 = m.b \times 10$

$m.b = 11$ cm

End of the questions

GEOMETRY – MODEL NO 4

[Q1] Choose the correct answer:

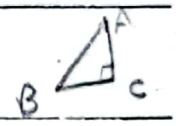
(1) Area of square whose side 12 cm is .....cm^2
a) 36 b) 48 c) 72 d) 144

(2) In Δ ABC, if $\overline{AD} \perp \overline{BC}$, then projection of point A on $\overline{BC}$ is .....
a) { D } b) $\overline{BD}$ c) $\overline{CD}$ d) $\overline{BC}$

(3) Measure of exterior angle o equilateral triangle is .....°
a) 30 b) 60 c) 120 d) 360

(4) The triangle of sides 5 cm , 8 cm , 12 cm is .....triangle
a) Right b) Acute c) Obtuse d) Isosceles

(5) In Δ ABC: $(AB)^2 = (BC)^2 + (AC)^2 + 5$, then m (∠C) .....90°
a) > b) = c) < d) ≤



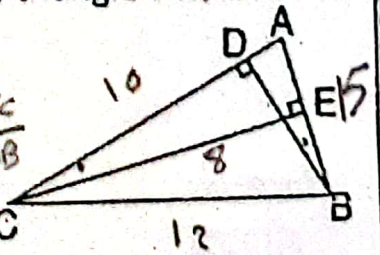
(6) The area of rhombus 100 cm^2, its diagonal 10 cm, the other diagonal is ..... cm
a) 2 b) 5 c) 10 d) 20

[Q2] Complete each of the following:

6) If the ratio between two similar triangles 2 : 3 and measure of one angle smaller triangle is 20°, then the measure of corresponding angle in greater triangle equals 20 °

7) Area of Parallelogram equals double area of triangle with common base and lies between two parallel lines

8) In the opposite figure:
AB = 15 cm , AC = 10 cm
EC = 8 cm, then BD = ...12..... cm



AEC ~ ADB
$\frac{AC}{AB} = \frac{AE}{AD} = \frac{EC}{DB}$
$\frac{10}{15} = \frac{8}{DB}$

9) Sum of measures of two complementary angles is .....90°.....

10) Two triangles are similar if their corresponding sides are proportional

∵ FX = FY & AC // XY ∴ Area Δ AXF = Area Δ CYF → (1)
∵ BF median ∴ area Δ BFX = Δ BFY → (2)

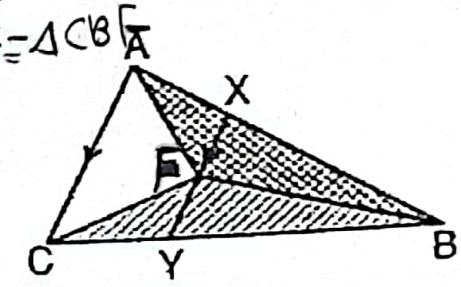
From (1) and (2) by adding ∴ Δ ABF = Δ CBF

[Q3] A) In the opposite figure:

$\overline{AC} \parallel \overline{XY}$, F midpoint of $\overline{XY}$

Prove that:

Area of Δ ABF = area of Δ CBF



B) In the opposite figure:

DE // BC , AE = 5 cm

EC = 2 cm, AD = 8 cm

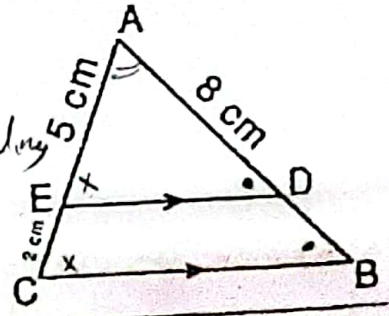
① Prove that: Δ ABC ≃ ADE

② Find length of $\overline{BD}$ 11.2 cm

∠A common
∠AED = ∠ACB
∠ADE = ∠ABC
∴ ΔABC ~ ΔADE (Corresponding)

$\frac{AE}{AC} = \frac{AD}{AB}$

$\frac{5}{7} = \frac{8}{AB}$



[Q4] A) Area of trapezium 180 cm², its height 12 cm, ratio between its two parallel bases 3 : 2, find length of each one 12, 18 cm

$180 = m \cdot b \times 12$

$m \cdot b = 15$

$\frac{3b + 2b}{2} = 15$ ⟨ $3b + 2b = 30$ ⟨ 3 : 2 : 5 ⟨ 12 : 18 : 30

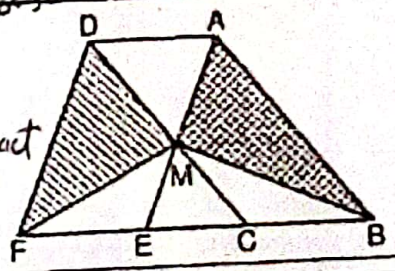
B) In the opposite figure:

ABCD, AEFD are two Parallelograms

Prove that: ABCD = AEFD, by subtract (AMD)

∴ ABM = DEM

Area of Δ ABM = area of Δ DFM



[Q5] In the opposite figure:

ABCD is quadrilateral, m(∠B) = 90°

$\overline{DE} \perp \overline{AC}$, AB = 7 cm, BC = 24 cm

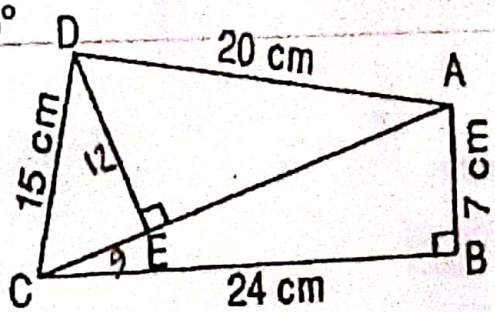
CD = 15 cm, DA = 20 cm

Find:

① Length of $\overline{AC}$ 25 cm

② Prove that m(∠ADC) = 90°

③ Find length of projection of $\overline{DC}$ on $\overline{AC}$ $\overline{CE}$ = 9 cm



$(AC)^2 = (CD)^2 + (AD)^2$

$625 = 225 + 400$

$DE = \frac{20 \times 15}{25} = 12$

$(CE)^2 = 225 - 144 = 81$

$CE = 9$ cm

End of the questions

GEOMETRY – MODEL No 5

[Q1] Complete each of the following:

6) The area of rhombus 48 cm^2, its diagonal 12 cm, the other diagonal is .....8..... cm

7) In Δ ABC, AB = 5 cm, BC = 7 cm, CA = 11 cm, then m (∠B) is obtuse

8) Two similar triangles, sides of first one 4 , 6 , 8 cm, perimeter of the other 72 cm, then the sides of the other 16., 24, 32 cm

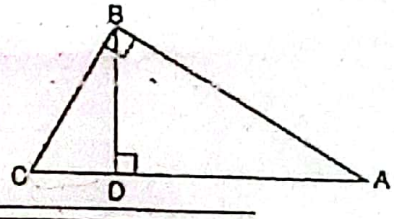
9) The median of triangle divide it into two triangles equal in area

10) In the opposite figure:

Δ ABC, m (∠ABC) =90°, $\overline{BD} \perp \overline{AC}$

① Then projection of $\overline{AB}$ on $\overline{AC}$ is $\overline{AD}$

② $(BC)^2$ = $\overline{CD}$ ..... × ..... $\overline{CA}$ .....



[Q2] Choose the correct answer:

(1) Area of triangle 24 cm^2, its height 8 cm, then its base .....cm

a) 2 b) 3 c) 6 d) 16

(2) ABCD is a Parallelogram, E ∈ CD, area of Δ AEB = 20 cm^2, then area of Parallelogram ABCD = ...cm^2

a) 10 b) 20 c) 30 d) 40

(3) A trapezium length of its parallel bases 5 cm , 7 cm, its area 42 cm, then its height = ... cm

a) 5 b) 6 c) 7 d) 12

(4) In Δ ABC, AB = 7 cm , BC = 5 cm , AC = 4 cm, then ∠ C .....

a) Acute b) Obtuse c) Right d) Straight

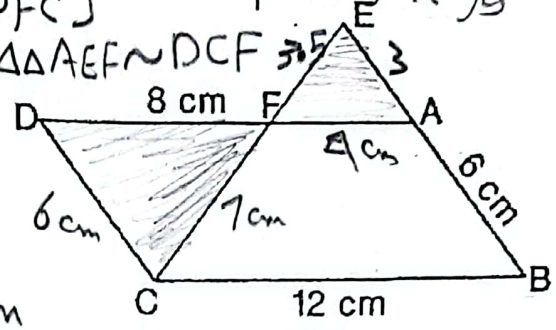
(5) If length of rectangle 12 cm , its diagonal 13 cm, the its area .....

a) 144 cm^2 b) 169 cm^2 c) 156 cm^2 d) 60 cm^2

AE // DC
∠EAF = ∠FDC
∠AEF = ∠DCF
∠EFA = ∠DFC
→ Corresponding Angles

[Q3] **A) In the opposite figure:**

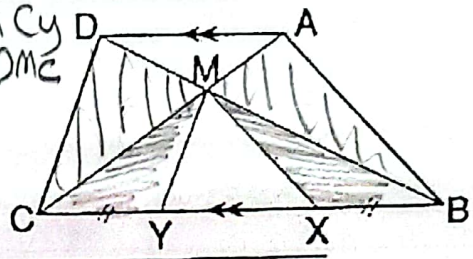
ABCD is Parallelogram, E ∈ $\overrightarrow{BA}$ ΔAEF ~ DCF 3:5
$\overline{CE} \cap \overline{AD} = \{F\}$, BC = 12 cm,
AB = 6 cm, FD = 8 cm, FC = 7 cm
① Prove that: Δ AEF ≅ Δ DCF
② Find length of $\overline{EB}$, $\overline{EF}$ 9cm 3.5cm



B) In the opposite figure:

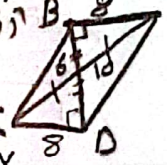
ΔMBX = ΔMCY
ΔAMB = ΔDMC
By Adding

$\overline{AD} // \overline{BC}$, $\overline{AC} \cap \overline{BD} = \{M\}$,
X, Y ∈ $\overline{BC}$, BX = CY, prove that:
Area of ABXM = area of DCYM



[Q4] **A)** ABCD is a Parallelogram, AB = 8 cm, AC = 20 cm, BD = 12 cm,
① Prove that m (∠ ABD) = 90°
② Find area of Parallelogram ABCD

$(10)^2 = (8)^2 + (6)^2$
∴ ABC = 90°
Area = 8 × 12 = 96 cm²

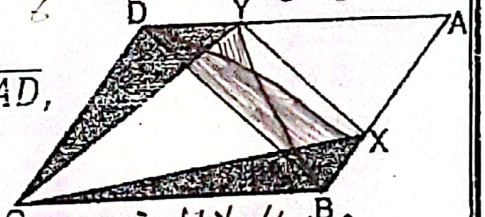


B) In the opposite figure:

ΔDYB = ΔCYD
ΔXBD = ΔBCX

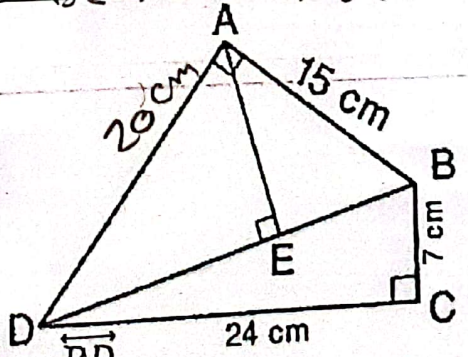
ABCD is Parallelogram, X ∈ $\overline{AB}$, Y ∈ $\overline{AD}$,
Area of Δ BCX = area of Δ CYD
Prove that: $\overline{XY} // \overline{BD}$

∴ DYB = XBD
BD Common base, ∴ YX // DB



[Q5] **In the opposite figure:**

ABCD is quadrilateral,
m (∠ BCD) = m(∠BAD) = 90°
$\overline{AE} \perp \overline{BD}$, BC = 7 cm, CD = 24 cm
AB = 15 cm, Find:
① Length of $\overline{BD}$, $\overline{AD}$ 25, 20
② Find length of projection of $\overline{AB}$ on $\overleftrightarrow{BD}$
③ Find length of projection of $\overline{AD}$ on $\overleftrightarrow{AE}$ $\overline{AE} = \frac{15 \times 20}{25} = 12$ cm



End of the questions

GEOMETRY – MODEL NO 6

[Q1] Choose the correct answer:

(1) The area of square whose diagonal 8 cm is ..... cm^2

a) 128 b) 64 c) 32 d) 16

(2) The side lengths 4 cm , 5 cm , 3 cm are sides of ..... triangle

a) Isosceles b) Acute c) Right d) Obtuse

(3) If the projection of line segment on a straight line is a point, then the line segment ..... on straight line

a) Parallel b) Perpendicular c) Coincide d) bisects

(4) If the area of a rhombus is 40 cm^2, and length of one of its diagonals is 10 cm, then the other diagonal is ..... cm

a) 80 b) 50 c) 4 d) 8

(5) The area of rectangle whose dimensions 4 cm , 9 cm ..... the area of rhombus whose diagonais 12 cm, 5 cm

a) > b) = c) < d) ≤

(6) The ratio between corresponding sides in two similar polygons is 1 : 3, if the perimeter of the smallest one 15 cm, then the perimeter of the greater polygon is ..... cm

a) 5 b) 45 c) 60 d) 75

[Q2] Complete each of the following:

6) XYZL is a parallelogram, area of Δ XYZ = 18 cm^2, then the area of parallelogram XYZL equals .....36..... cm^2

7) In Δ ABC, if (AB – AC) (AB + AC) < $(BC)^2$, then ∠C is ..acute

8) Two parallel straight lines to third are ..parallel

9) Number of axes of symmetry of an equilateral triangle is ..3..

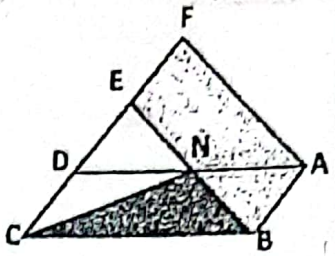
10) If two triangles drawn on same base are equal in area, then its vertices on the straight line ..parallel..to The base

[Q3] A) **In the opposite figure:**

ABCD, ABEF are two parallelograms

Prove that:

Area of Δ NBC = $\frac{1}{2}$ area Parallelogram of ABEF



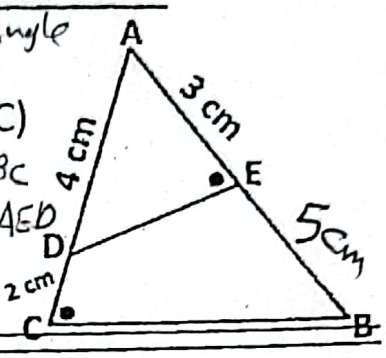
B) **In the opposite figure:**

Δ ABC, D ∈ $\overline{AC}$. E ∈ $\overline{AB}$, m (∠AED) = m (∠C)

AE = 3 cm, AD = 4 cm, CD = 2 cm

① Prove that: Δ ABC ~ Δ AED

② Find the length of $\overline{EB}$



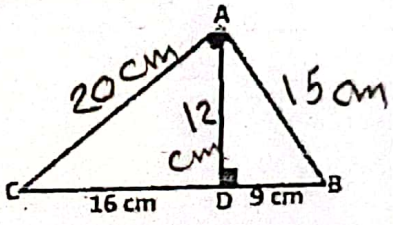
[Q4] A) A trapezium of area 180 cm^2, its height 12 cm, the ratio between length of its bases 3 : 2. Find length of its bases.

B) **In the opposite figure:**

Δ ABC if right triangle at A,

$\overline{AD} \perp \overline{BC}$, BD = 9 cm,

CD = 16 cm, find length of $\overline{AD}$, $\overline{AB}$, $\overline{AC}$



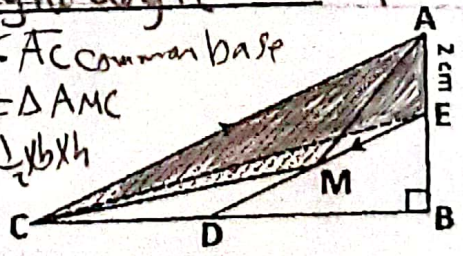
[Q5] A) Δ XYZ, XY = 12 cm , YZ = 20 cm , XZ = 16 cm, determine the type of triangle according to its angles

B) **In the opposite figure:**

Δ ABC right at B, $\overline{ED} \parallel \overline{AC}$

AE = 2 cm , BC = 5 cm

Find area of Δ AMC



End of the questions

GEOMETRY – MODEL NO 7

[Q1] Choose the correct answer:

(1) The area of rhombus whose diagonals 10 cm , 12 cm is ..... cm^2

a) 240 b) 120 c) 60 d) 30

(2) In Δ ABC, $(AC)^2 = (AB - BC)(AB + BC)$, then m($\angle$B) .....$90^\circ$

a) > b) ≥ c) = d) <

(3) Two perpendicular straight line on third are .....

a) Parallel b) Perpendicular c) Coincide d) Intersecting

(4) The length of diagonal of square whose area 50 cm^2 is ..... cm

a) 100 b) 20 c) 10 d) 5

(5) Length of projection of line segment on straight line parallel to it ..... length of line segment.

a) > b) = c) < d) ≤

(6) If ABCD ≃ XYZL, m($\angle$A) = 80°, m($\angle$Z) = 50°, m($\angle$D) = 120°, then m($\angle$B) = ...°

a) 90 b) 110 c) 130 d) 250

[Q2] Complete each of the following:

6) If Δ ABC ≃ Δ XYZ, and AB : XY = 2 : 5, AC = 8 cm, then XZ = 20 cm

7) Area of square of side length 8 cm = ...64..... cm^2

8) In Δ ABC, D is midpoint of BC, Area of Δ ABD = 20 cm^2, then area of Δ ABC = ...40..... cm^2

9) If the ratio of enlargement for two similar triangles equal one, then the two triangle are Congruent

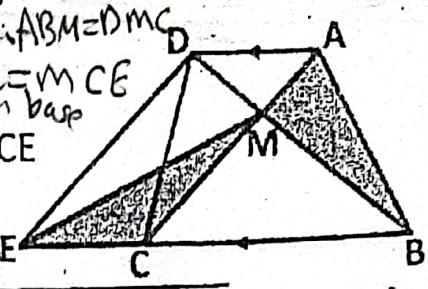
10) The isosceles triangle has .....1..... Axes of symmetry

$\overline{AD} // \overline{BC}$ ∴ area $\triangle ABD$ = area $\triangle DCA$ (common base $\overline{AD}$)
by subtract $\triangle AMD$ ∴ $\triangle ABM$ = $\triangle DMC$

[Q3] **A) In the opposite figure:** ∴ area $\triangle DMC$ = area $\triangle MCE$ (and $\triangle DMC$ common base)

$\overline{AD} // \overline{BC}$, area of $\triangle ABM$ = area of $\triangle MCE$

Prove that: $\overline{AC} // \overline{DE}$ ∴ $\overline{AC} // \overline{DE}$ #

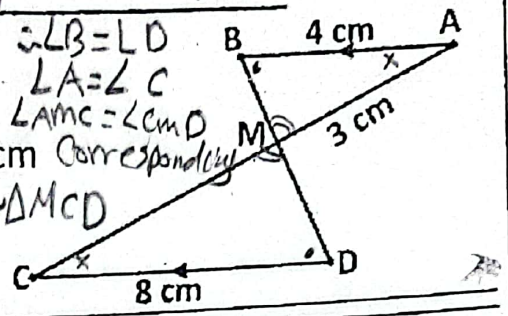


B) In the opposite figure: ∴ $\overline{AB} // \overline{DC}$ ∴ $\angle B = \angle D$, $\angle A = \angle C$, $\angle AMC = \angle CMD$

$\overline{AB} // \overline{DC}$, $\overline{AC} \cap \overline{BD} = \{M\}$, AB = 4 cm (Correspondingly) ∴ $\triangle MAB \sim \triangle MCD$

MA = 3 cm, DC = 8 cm

Prove that: $\triangle MAB \simeq \triangle MCD$



[Q4] **A)** The area of trapezium is 80 cm^2, its height 8 cm, length of one of its parallel bases is 15 cm, find the length of other base. $80 = \left(\frac{15+b_2}{2}\right) \times 8$ = 5 cm

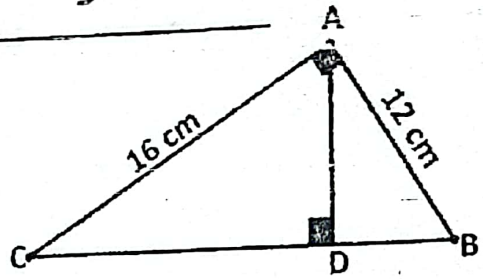
---

B) In the opposite figure:

$\triangle ABC$ right at $\angle BAC$, $\overline{AD} \perp \overline{BC}$,

AB = 12 cm, AC = 16 cm

Find length of $\overline{BC}$, $\overline{AD}$ 9.6 cm 20 cm



[Q5] **A)** In $\triangle LMN$, LM = 5 cm, MN = 7 cm, LN = 6 cm, determine the type of triangle according to its angles $(MN)^2 < (LN)^2 + (LM)^2$ $49 < 61$ acute

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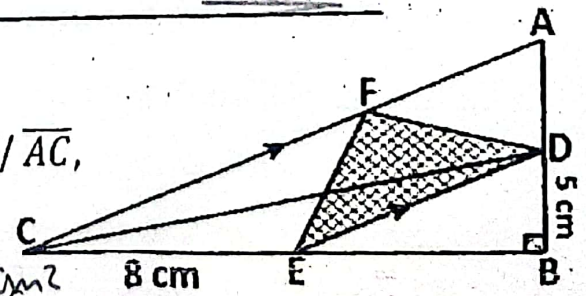
B) In the opposite figure:

$\triangle ABC$ is right at ($\angle B$), $\overline{DE} // \overline{AC}$,

DB = 5 cm, EC = 8 cm

Find the area of $\triangle FDE$ 20 cm^2



$\triangle FDE = \triangle CDE$ (common base ED and $CF // ED$)

Area $\triangle CDE = \frac{1}{2} \times 8 \times 5$ = 20 cm^2

End of the questions

GEOMETRY – MODEL NO 8

[Q1] Choose the correct answer:

(1) The two triangle are equal in area and drawn in same base in one side of it, then their vertices on straight line ..... base
a) Perpendicular b) Bisects c) Parallel d) Transversal

(2) The area of triangle whose base 8 cm and its corresponding height 5 cm = ...cm^2
a) 80 b) 40 c) 20 d) 10

(3) The angles of two similar polygons are ..... measure
a) Equal b) Different c) Proportional d) Alternative

(4) .....is a parallelogram with perpendicular diagonal
a) Square b) Rectangle c) Rhombus d) Trapezium

(5) The two base angle of an isosceles triangle are .....
a) Complementary b) Supplementary c) Adjacent d) Congruent

(6) The area of square whose diagonal 8 cm equal ..32 Cm^2
a) ..... b) ..... c) ..... d) .....

[Q2] Complete each of the following:

6) The area of rhombus equals half product of ...its...diagonals

7) In Δ XYZ, $(XY)^2 = (YZ)^2 - (XY)^2$, then m ($\angle$ X..) = 90°

8) If A $\in$ straight line L, then projection of A on L is ..itself..

9) Δ ABC $\simeq$ Δ XYZ, and AB = 5 cm , XY = 3 cm
Then perimeter of Δ ABC : perimeter of Δ XYZ = ..5.. : ..3

10) The lengths of two parallel bases in trapezium are 10 cm, 6 cm, then the length of its middle base is .....8..... c m

base = $\sqrt{(8)^2+(6)^2} = \sqrt{100} = 10$ cm

$h = \frac{A}{b} = \frac{96}{10} = 9.6$ cm

[Q3] A) Find the height of rhombus whose area 96 cm^2 and lengths of its diagonals 12 cm, 16 cm

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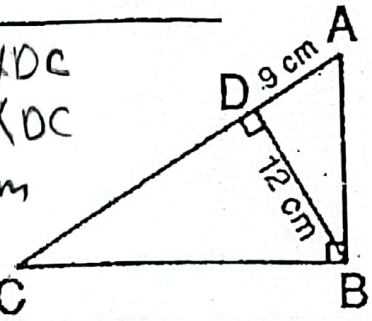
B) **In the opposite figure:**

Δ ABC right at B, $\overline{BD} \perp \overline{AC}$,
If BD = 12 cm, AD = 9 cm
Find length of $\overline{DC}$

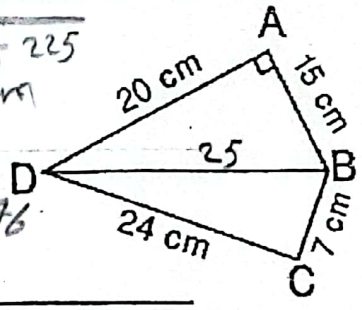
$(BD)^2 = AD \times DC$
$144 = 9 \times DC$
$DC = 16$ cm



[Q4] A) **In the opposite figure:**

m ($\angle$ A) = 90°, AB = 15 cm , AD = 20 cm
BC = 7 cm, CD = 24 cm
Prove that: m ($\angle$ C) = 90°

$DB = \sqrt{400+225}$
$DB = 25$ cm
$\because 625 = 49 + 576$
$\therefore \angle C = 90°$



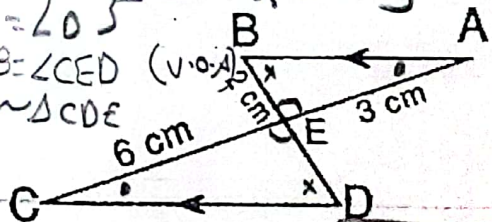
B) Find the area of trapezium with two parallel bases 8 cm, 10 cm and its height 6 cm

$A = \left(\frac{b_1+b_2}{2}\right)h = 9 \times 6 = 54\ cm^2$

[Q5] A) **In the opposite figure:**

$\overline{AB} // \overline{CD}$, $\overline{AC} \cap \overline{BD} = \{E\}$
AE = 3 cm, BE = 2 cm, CE = 6 cm
① Prove that: Δ ABE $\simeq \Delta$ CDE
② Find the length of $\overline{ED}$

$\angle A = \angle C$, $\angle B = \angle D$ } Corresponding
$\angle AEB = \angle CED$ (V.O.A)
$\therefore \Delta ABE \sim \Delta CDE$



$\frac{EB}{ED} = \frac{AE}{CE}$, $\frac{2}{ED} = \frac{3}{6}$, $ED = 4$ cm

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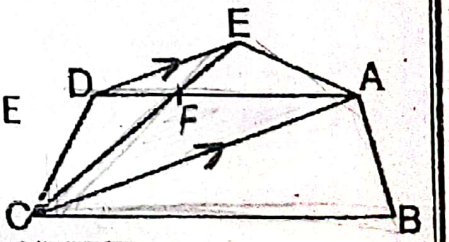
B) **In the opposite figure:**

Area of figure ABCD = area of figure ABCE

Prove that: $\overline{AC} // \overline{ED}$

$\because$ ABCD = ABCE
by subtract $\triangle ABC$
$\therefore$ Area $\Delta AEF = \Delta CDF$ → by adding DEF
$\therefore$ area $\Delta ADE = \Delta CDE$ and DE common base
$\therefore ED // AC$



End of the questions

GEOMETRY – MODEL NO 9

[Q1] Choose the correct answer:

(1) Area of square of diagonal 10 cm is ..... Cm^2

a) 100 b) 50 c) 40 d) 20

(2) In Δ ABC, $(AC)^2 = (AB)^2 + (BC)^2 + 9$, then m ($\angle$B) .....$90^\circ$

a) > b) = c) < d) $\leq$

(3) In Δ ABC, $\overline{AD} \perp \overline{BC}$, then projection of $\overline{AD}$ on $\overleftrightarrow{BC}$ is .....

a) $\overline{BD}$ b) $\overline{CD}$ c) $\overline{BC}$ d) { D }

(4) The area of rhombus 42 cm^2 and one of its diagonals 12 cm, then the other diagonal is .....

a) 14 b) 7 c) 3.5 d) 2

(5) In a Parallelogram, length of two adjacent sides 7 cm , 9 cm and smaller height 4 cm, then its area ..... cm^2

a) 14 b) 18 c) 28 d) 36

(6) In Δ ABC right at B, m ($\angle$C) = 30°, AB = 5 cm, then AC = ... cm

a) 5 b) $5\sqrt{3}$ c) 10 d) 15

[Q2] Complete each of the following:

6) If the drawing scale of two similar triangles 2 : 3 and measure of one of angles of smaller triangle is 80°, then the measure of corresponding angles in greater triangle equals 80°

7) The measure of two supplementary angles is ...180°

8) If $\Delta ABC \simeq \Delta XYZ$ and m($\angle$B) = 30°, m($\angle$Z) = 50°, then m ($\angle$X) = 100°

9) Length of projection of line segment on straight line parallel to it Equal Length of line segment

10) If a straight line cut two parallel lines, then each two alternative angles are Equal in measure

$\Delta XYZ = \frac{1}{2}$ ABYX → ①

$\Delta YYZ = \frac{1}{2}$ DCYX → ②

by add ① + ②

[Q3] A) In the opposite figure:

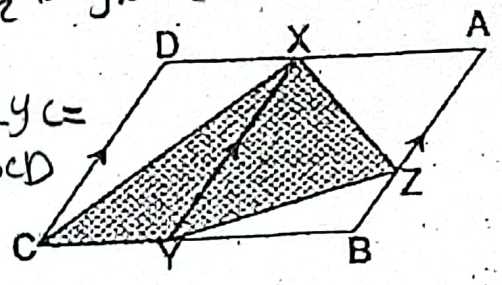
∴ area XZYC =

ABCD is a Parallelogram, $\frac{1}{2}$ ABCD

And $\overline{XY} // \overline{AB} // \overline{DC}$

Prove that:

Area of figure XZYC = $\frac{1}{2}$ area of Parallelogram ABCD



B) In the opposite figure:

$\overline{DE} // \overline{BC}$, AE = 5 cm, EC = 2 cm, AD = 8 cm, prove that: Δ ABC ≃ ADE

Then find the length of $\overline{BD}$

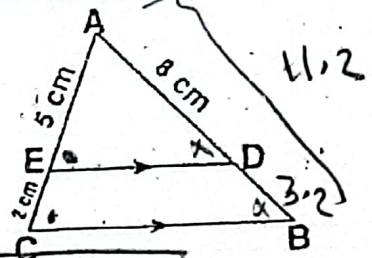
{ ∠A common, ∠AED = ∠ACE, ∠ADE = ∠ABC

∴ ABC ~ ADE

$\frac{AD}{AB} = \frac{AE}{AC}$

$\frac{8}{AB} = \frac{5}{7}$ AB = 11.2

DB = 3.2 cm



[Q4] A) Find the height of a trapezium whose middle base 12 cm and its surface area 60 cm^2, if one of its bases is twice the other, find length of each one?

$h = \frac{60}{12} = 5$ cm ; $\frac{x + 2x}{2} = 12$

8 cm 16 cm $3x = 24$ $x = 8$

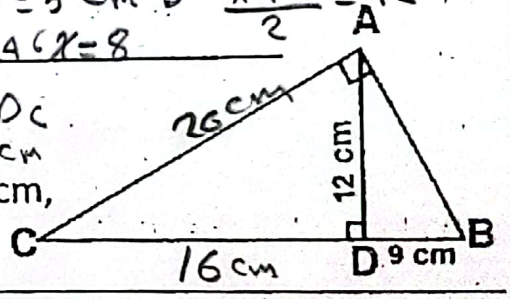
B) In the opposite figure:

$(AD)^2 = 9 \times DC$

$DC = 16$ cm

Δ ABC right at A, $\overline{AD} \perp \overline{BC}$, AD = 12 cm, BD = 9 cm, Find length of $\overline{DC}$, $\overline{AC}$

16 , 20



[Q5] A) Determine the type of triangle according to its angles if its sides lengths are AB = 10 cm, AC = 6 cm, BC = 8 cm

$100 = 64 + 36$ right angle

B) In the opposite figure:

∵ ABE = ADC

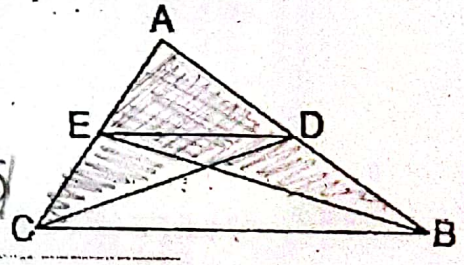
by subtrad ADE

Area of Δ ABE = area of Δ ADC

∴ EDB = EDC

Prove that: $\overline{DE} // \overline{BC}$ Same base ED

∴ DE // BC



End of the questions

GEOMETRY – MODEL NO 10

[Q1] *Choose the correct answer:*

(1) Area of triangle equal ..... Area of Parallelogram with common base and between two parallel lines one of them carrying this base

a) Same b) Half c) Double d) Quarter

(2) The height of triangle whose area 36 cm^2 and its base 9 cm is..

a) 2 cm b) 4 cm c) 8 cm d) 12 cm

(3) Length of projection of line segment on straight line parallel to it ..... Length of line segment

a) > b) = c) < d) ≤

(4) Area of square whose diagonal 6 cm is ..... cm^2

a) 12 b) 18 c) 36 d) 72

(5) Sum of interior angles of triangle is .....°

a) 180 b) 360 c) 540 d) 720

(6) An isosceles triangle has .....axes of symmetry

a) Zero b) One c) Two d) Three

[Q2] Complete each of the following:

6) The median of triangle divide it into two triangles equal in area

7) Δ ABC, AB = 8 cm, BC = 6cm, AC = 10 cm, type of ∠A is acute

8) The base of Parallelogram whose area 42 cm^2 and its height 6cm is ..... 7 cm .....

9) Two triangles are similar if their angles equal in measure

10) If the ratio of similarity between two triangles equal one, then two triangles are Congruent

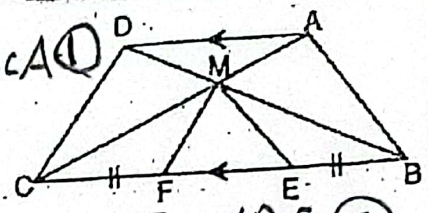
[Q3] **A) In the opposite figure:** ∵ AD // BC, DA common base ∴ ΔABD = ΔDCA (1)

$\overline{AD} // \overline{BC}$, $\overline{BE} = \overline{FC}$ ΔΔ MBE, MCF

Prove that: common vertex and equal bases

Area of figure ABEM = area of figure DCFM ∴ MBE = MDF (2)

by Adding (1)+(2) ∴ ABEM = DCFM #

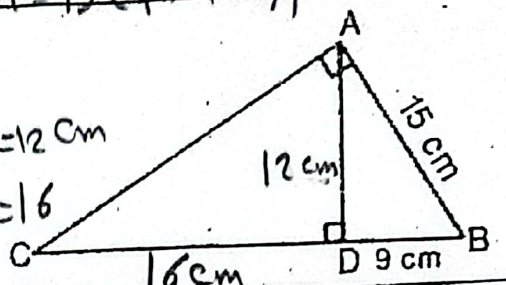


B) In the opposite figure:

Δ ABC is right at A, $\overline{AD} \perp \overline{BC}$ AD = 12 cm

If AB = 15 cm, BD = 9 cm CD = $\frac{144}{9}$ = 16

Find length of BC = 25 cm



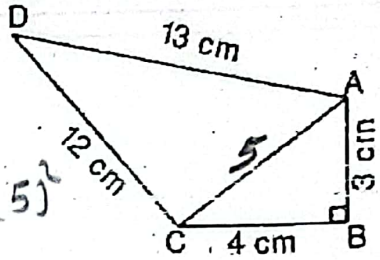
[Q4] **A) In the opposite figure:**

m (∠B) = 90°, AB = 3 cm, BC = 4 cm

DA = 13 cm, DC = 12 cm

Prove that: m (∠ ACD) = 90° $(13)^2 = (12)^2 + (5)^2$ 169 = 169

∴ ACD = 90° #



B) Find height of a trapezium whose area 40 cm^2, and lengths of its two parallel bases are 7 cm , 9 cm $h = \frac{40}{8} = 5$ cm

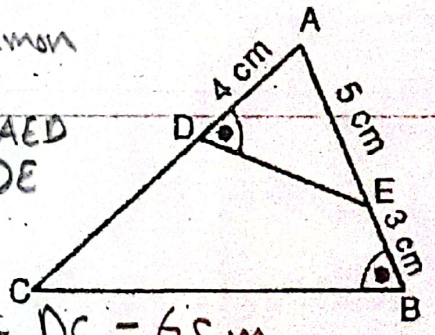
[Q5] **A) In the opposite figure:** ∠A common, ∠B = ADE ∴ ∠C = AED

AE = 5 cm, AD = 4 cm, BE = 3 cm ∴ ΔABC ~ ΔADE

And m (∠B) = m (∠ADE)

① Prove that: Δ ABC ≃ Δ ADE

② Find length of $\overline{DC}$ $\frac{AE}{AC} = \frac{AD}{AB}$ $\frac{5}{AC} = \frac{4}{8}$ AC = 10 cm ∴ DC = 6 cm



B) Find the area of rhombus whose diagonals 8 cm, 6 cm and find length of its height.

$A = \frac{1}{2} \times 6 \times 8 = 24\ cm^2$

base = 5 cm

$h = \frac{24}{5} = 4.8$ cm

End of the questions

(تم بحمد الله)

GEOMETRY – MODEL NO 1

[Q1] Choose the correct answer:

(1) The area of square whose diagonal 8 cm is ..... cm^2

a) 128 b) 64 c) 32 d) 16

(2) The side lengths 4 cm , 5 cm , 3 cm are sides of ..... triangle

a) Isosceles b) Acute c) Right d) Obtuse

(3) If the projection of line segment on a straight line is a point, then the line segment ..... on straight line

a) Parallel b) Perpendicular c) Coincide d) bisects

(4) If the area of a rhombus is 40 cm^2, and length of one of its diagonals is 10 cm, then the other diagonal is ..... cm

a) 80 b) 50 c) 4 d) 8

(5) The area of rectangle whose dimensions 4 cm , 9 cm ..... the area of rhombus whose diagonals 12 cm , 5 cm

a) > b) = c) < d) ≤

(6) The ratio between corresponding sides in two similar polygons is 1 : 3, if the perimeter of the smallest one 15 cm, then the perimeter of the greater polygon is ..... cm

a) 5 b) 45 c) 60 d) 75

[Q2] Complete each of the following:

6) XYZL is a parallelogram, area of Δ XYZ = 18 cm^2, then the area of parallelogram XYZL equals ..... cm^2

7) In Δ ABC, if (AB –AC) (AB + AC) < $(BC)^2$, then $\angle$ C is .....

8) Two parallel straight lines to third are .....

9) Number of axes of symmetry of an equilateral triangle is .....

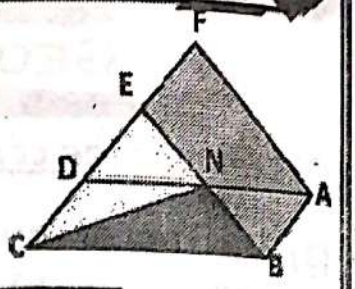
10) If two triangles drawn on same base are equal in area, then its vertices on the straight line .....

[Q3] A) In the opposite figure:

ABCD, ABEF are two parallelograms

Prove that:

Area of Δ NBC = area Parallelogram of ABEF



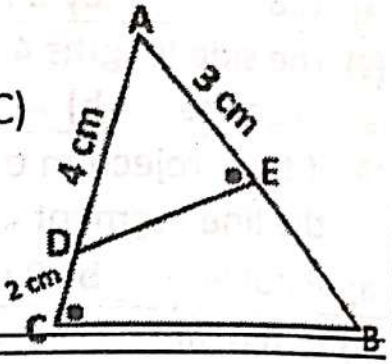
B) In the opposite figure:

Δ ABC, D ∈ $\overline{AC}$. E ∈ $\overline{AB}$, m (∠AED) = m (∠C)

AE = 3 cm, AD = 4 cm, CD = 2 cm

① Prove that: Δ ABC ~ Δ AED

② Find the length of $\overline{EB}$



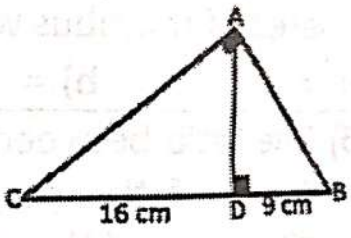
[Q4] A) A trapezium of area 180 cm^2, its height 12 cm, the ratio between length of its bases 3 : 2. Find length of its bases.

B) In the opposite figure:

Δ ABC if right triangle at A,

$\overline{AD} \perp \overline{BC}$, BD = 9 cm,

CD = 16 cm, find length of $\overline{AD}$, $\overline{AB}$, $\overline{AC}$



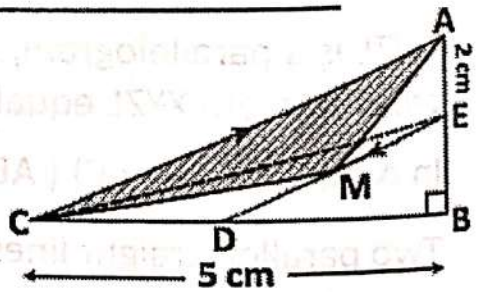
[Q5] A) Δ XYZ, XY = 12 cm , YZ = 20 cm , XZ = 16 cm, determine the type of triangle according to its angles

B) In the opposite figure:

Δ ABC right at B, $\overline{ED} \,//\, \overline{AC}$

AE = 2 cm , BC = 5 cm

Find area of Δ AMB



End of the questions

GEOMETRY – MODEL NO 2

[Q1] Choose the correct answer:

(1) The area of rhombus whose diagonals 10 cm , 12 cm is ..... cm^2

a) 240 **b)** 120 c) 60 **d)** 30

(2) In ΔABC, $(AC)^2 = (AB - BC)(AB + BC)$, then m $(\angle B)$ .....90°

a) > **b)** $\geq$ c) = **d)** <

(3) Two perpendicular straight line on third are .....

a) Parallel **b)** Perpendicular c) Coincide **d)** Intersecting

(4) The length of diagonal of square whose area 50 cm^2 is ..... cm

a) 100 **b)** 20 c) 10 **d)** 5

(5) Length of projection of line segment on straight line parallel to it ..... length of line segment.

a) > **b)** = c) < **d)** $\leq$

(6) If $ABCD \simeq XYZL$, $m(\angle A) = 80^\circ$, $m(\angle Z) = 50^\circ$, $m(\angle D) = 120^\circ$, then $m(\angle B)$ = ...$^\circ$

a) 90 **b)** 110 c) 130 **d)** 250

[Q2] Complete each of the following:

6) If $\Delta ABC \simeq \Delta XYZ$, and AB : XY = 2 : 5, AC = 8 cm, then XY = ... cm

7) Area of square of side length 8 cm = ... cm^2

8) In Δ ABC, D is midpoint of BC, Area of Δ ABD = 20 cm^2, then area of Δ ABC = ... cm^2

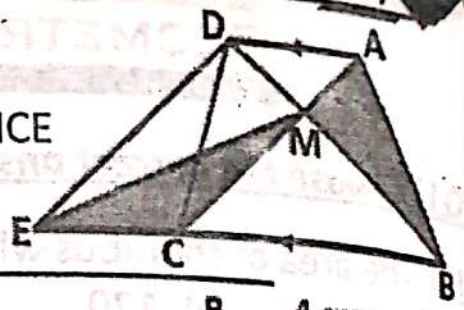
9) If the ratio of enlargement for two similar triangles equal one, then the two triangle are .....

10) The isosceles triangle has ..... Axes of symmetry

[Q3] A) In the opposite figure:

$\overline{AD} \parallel \overline{BC}$, area of Δ ABM = area of Δ MCE

Prove that: $\overline{AC} \parallel \overline{DE}$

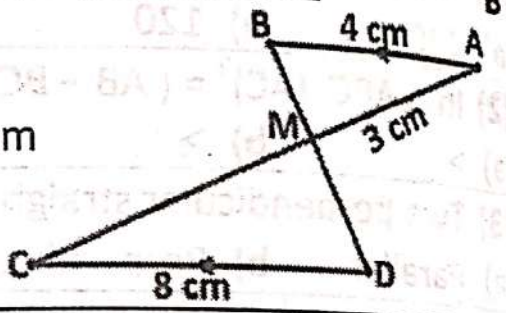


B) In the opposite figure:

$\overline{AB} \parallel \overline{DC}$, $\overline{AC} \cap \overline{BD}$ = {M}, AB = 4 cm

MA = 3 cm, DC = 8 cm

Prove that: Δ MAB ≃ Δ MCD



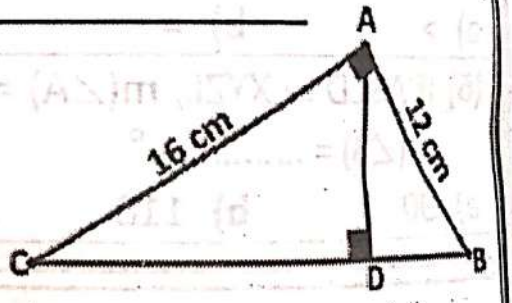
[Q4] A) The area of trapezium is 80 cm^2, its height 8 cm, length of one of its parallel bases is 15 cm, find the length of other base.

B) In the opposite figure:

Δ ABC right at ∠ BAC, $\overline{AD} \perp \overline{BC}$,

AB = 12 cm, AC = 16 cm

Find length of $\overline{BC}$, $\overline{AD}$



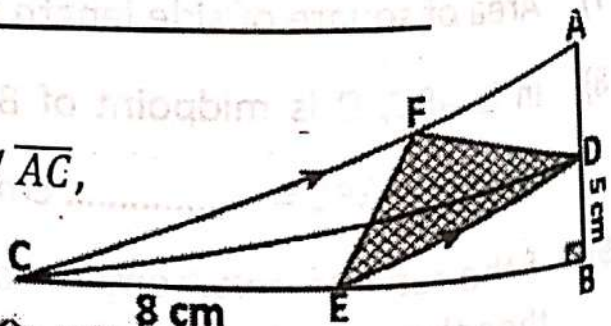
[Q5] A) In Δ LMN, LM = 5 cm, MN = 7 cm , LN = 6 cm, determine the type of triangle according to its angles

B) In the opposite figure:

Δ ABC is right at (∠ B), $\overline{DE} \parallel \overline{AC}$,

DB = 5 cm , EC = 8 cm

↳ Find the area of Δ FDE



End of the questions

GEOMETRY – MODEL NO 3

[Q1] Choose the correct answer:

(1) The two triangle are equal in area and drawn in same base in one side of it, then their vertices on straight line ..... base

a) Perpendicular **b)** Bisects **c)** Parallel **d)** Transversal

(2) The area of triangle whose base 8 cm and its corresponding height 5 cm = ...cm^2

a) 80 **b)** 40 **c)** 20 **d)** 10

(3) The angles of two similar polygons are ..... measure

a) Equal **b)** Different **c)** Proportional **d)** Alternative

(4) .....is a parallelogram with perpendicular diagonal

a) Square **b)** Rectangle **c)** Rhombus **d)** Trapezium

(5) The two base angle of an isosceles triangle are .....

a) Complementary **b)** Supplementary **c)** Adjacent **d)** Congruent

(6) The area of square whose diagonal 8 cm equal ..... Cm^2

a) ..... **b)** ..... **c)** ..... **d)** .....

[Q2] Complete each of the following:

6) The area of rhombus equals half product of .....

7) In Δ XYZ, $(XY)^2 = (YZ)^2 - (XY)^2$, then m ($\angle$ .....) = 90°

8) If A $\in$ straight line L, then projection of A on L is .....

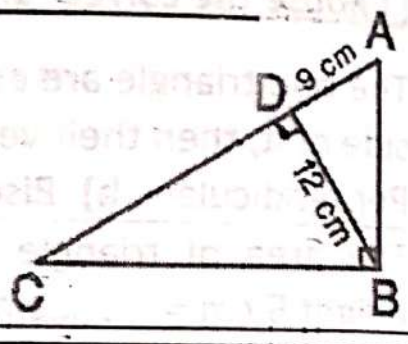
9) Δ ABC $\simeq$ Δ XYZ, and AB = 5 cm , XY = 3 cm
Then perimeter of Δ ABC : perimeter of Δ XYZ = ... : ....

10) The lengths of two parallel bases in trapezium are 10 cm, 6 cm, then the length of its middle base is ..... c m

[Q3] A) Find the height of rhombus whose area 96 cm^2 and lengths of its diagonals 12 cm, 16 cm

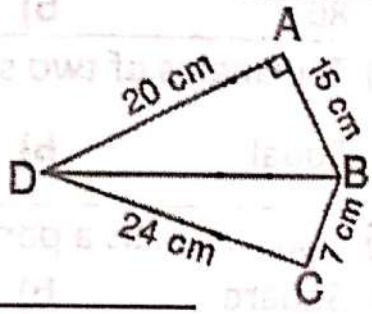
B) In the opposite figure:

Δ ABC right at B, $\overline{BD} \perp \overline{AC}$,
If BD = 12 cm, AD = 9 cm
Find length of $\overline{DC}$



[Q4] **A) In the opposite figure:**

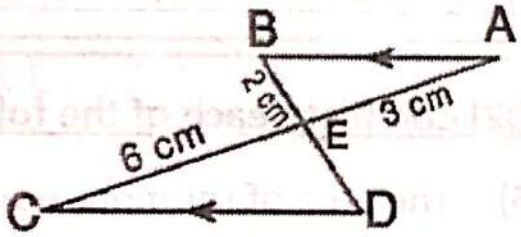
m ($\angle$ A) = 90°, AB = 15 cm , AD = 20 cm
BC = 7 cm, CD = 24 cm
Prove that: m ($\angle$ C) = 90°



B) Find the area of trapezium with two parallel bases 8 cm, 10 cm and its height 6 cm

[Q5] **A) In the opposite figure:**

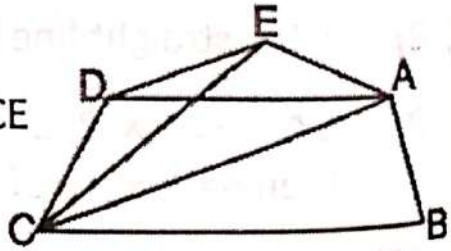
$\overline{AB}$ // $\overline{CD}$, $\overline{AC} \cap \overline{BD}$ = { E }
AE = 3 cm, BE = 2 cm, CE = 6 cm
① Prove that: Δ ABE $\simeq$ Δ CDE
② Find the length of $\overline{ED}$



B) In the opposite figure:

Area of figure ABCD = area of figure ABCE

Prove that: $\overline{AC}$ // $\overline{ED}$



End of the questions

GEOMETRY – MODEL NO 4

[Q1] Choose the correct answer:

(1) Area of square of diagonal 10 cm is ..... Cm^2

a) 100 b) 50 c) 40 d) 20

(2) In Δ ABC, $(AC)^2 = (AB)^2 + (BC)^2 + 9$, then m ($\angle$B) .....$90^\circ$

a) > b) = c) < d) $\leq$

(3) In Δ ABC, $\overline{AD} \perp \overline{BC}$, then projection of $\overline{AD}$ on $\overleftrightarrow{BC}$ is .....

a) $\overline{BD}$ b) $\overline{CD}$ c) $\overline{BC}$ d) { D }

(4) The area of rhombus 42 cm^2 and one of its diagonals 12 cm, then the other diagonal is .....

a) 14 b) 7 c) 3.5 d) 2

(5) In a Parallelogram, length of two adjacent sides 7 cm , 9 cm and smaller height 4 cm, then its area ..... cm^2

a) 14 b) 18 c) 28 d) 36

(6) In Δ ABC right at B, m ($\angle$C) = 30°, AB = 5 cm, then AC = ... cm

a) 5 b) $5\sqrt{3}$ c) 10 d) 15

[Q2] Complete each of the following:

6) If the drawing scale of two similar triangles 2 : 3 and measure of one of angles of smaller triangle is 80°, then the measure of corresponding angles in greater triangle equals .....$^\circ$

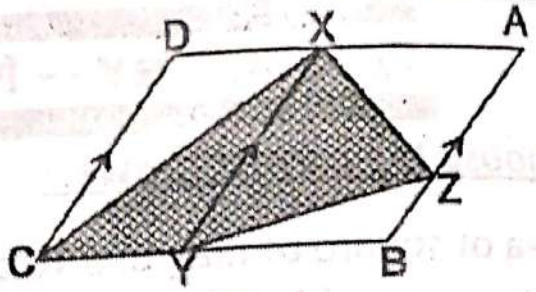
7) The measure of two supplementary angles is .....$^\circ$

8) If Δ ABC $\simeq \Delta$ XYZ and m($\angle$B) = 30°, m($\angle$Z) = 50°, then m ($\angle$X) =..

9) Length of projection of line segment on straight line parallel to it ..... Length of line segment

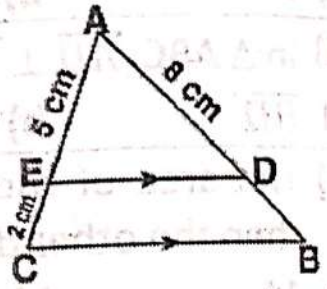
10) If a straight line cut two parallel lines, then each two alternative angles are .....

[Q3] A) In the opposite figure:



ABCD is a Parallelogram,
And $\overline{XY}$ // $\overline{AB}$ // $\overline{DC}$
Prove that:
Area of figure XZYC = $\frac{1}{2}$ area of Parallelogram ABCD

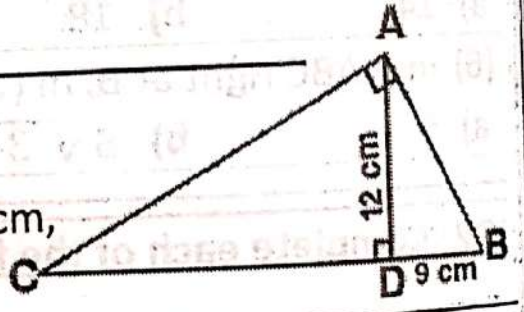
B) In the opposite figure:



$\overline{DE}$ // $\overline{BC}$, AE = 5 cm , EC = 2 cm
AD = 8 cm, prove that: Δ ABC ≃ ADE
Then find the length of $\overline{BD}$

[Q4] A) Find the height of a trapezium whose middle base 12 cm and its surface area 60 cm^2, if one of its bases is twice the other, find length of each one?

B) In the opposite figure:



Δ ABC right at B, $\overline{AD} \perp \overline{BC}$, AD = 12 cm,
BD = 9 cm, Find length of $\overline{DC}$, $\overline{AC}$

[Q5] A) Determine the type of triangle according to its angles if its sides lengths are AB = 10 cm, AC = 6 cm, BC = 8 cm

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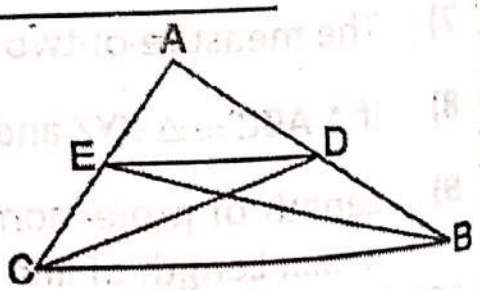
B) In the opposite figure:



Area of Δ ABE = area of Δ ADC
Prove that: $\overline{DE}$ // $\overline{BC}$

End of the questions

GEOMETRY – MODEL NO 5

[Q1] Choose the correct answer:

(1) Area of triangle equal ..... Area of Parallelogram with common base and between two parallel lines one of them carrying this base

a) Same b) Half c) Double d) Quarter

(2) The height of triangle whose area 36 cm^2 and its base 9 cm is..

a) 2 cm b) 4 cm c) 8 cm d) 12 cm

(3) Length of projection of line segment on straight line parallel to it ..... Length of line segment

a) > b) = c) < d) ≤

(4) Area of square whose diagonal 6 cm is ..... cm^2

a) 12 b) 18 c) 36 d) 72

(5) Sum of interior angles of triangle is .....°

a) 180 b) 360 c) 540 d) 720

(6) An isosceles triangle has .....axes of symmetry

a) Zero b) One c) Two d) Three

[Q2] Complete each of the following:

6) The median of triangle divide it into two triangles .....

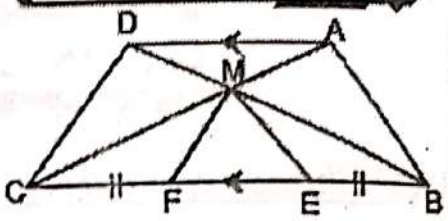
7) Δ ABC, AB = 8 cm, BC = 6cm, AC = 10 cm, type of ∠A is.....

8) The base of Parallelogram whose area 42 cm^2 and its height 6cm is .....

9) Two triangles are similar if their angles .....

10) If the ratio of similarity between two triangles equal one, then two triangles are .....

[Q3] A) In the opposite figure:

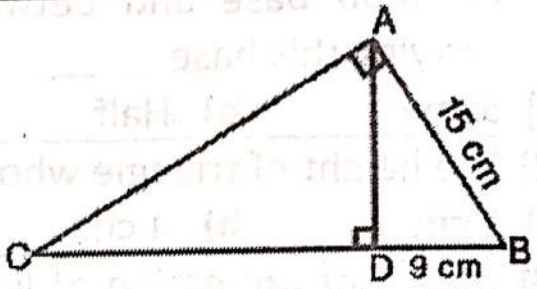


$\overline{AD}$ // $\overline{BC}$, $\overline{BE} = \overline{FC}$

Prove that:

Area of figure ABEM = area of figure DCFM

B) In the opposite figure:

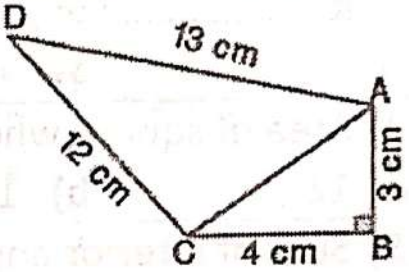


Δ ABC is right at A, $\overline{AD} \perp \overline{BC}$

If AB = 15 cm, BD = 9 cm

Find length of BC

[Q4] A) In the opposite figure:



m (∠B) = 90°, AB = 3 cm, BC = 4 cm

DA = 13 cm, DC = 12 cm

Prove that: m (∠ ACD) = 90°

B) Find height of a trapezium whose area 40 cm^2, and lengths of its two parallel bases are 7 cm , 9 cm

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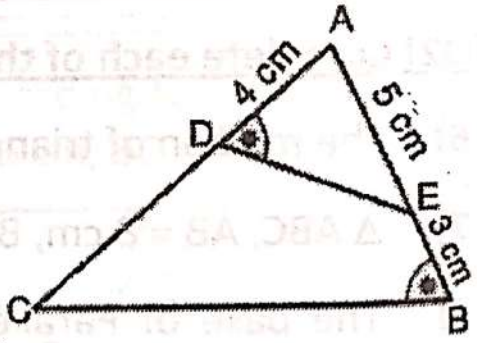
[Q5] A) In the opposite figure:



AE = 5 cm, AD = 4 cm, BE = 3 cm

And m (∠B) = m (∠ADE)

① Prove that: Δ ABC ≃ Δ ADE

② Find length of $\overline{DC}$

B) Find the area of rhombus whose diagonals 8 cm, 6 cm and find length of its height.

End of the questions

GEOMETRY – MODEL No. 6

[Q1] Choose the correct answer:

(1) If area of rhombus 40 cm^2, one of its diagonals 10 cm, then the length of other diagonal ..... cm

a) 5 **b)** 6 **c)** 8 **d)** 10

(2) If the area of square 50 cm^2, then length of its diagonal ..... cm

a) 5 **b)** 10 **c)** 25 **d)** 100

(3) In Δ ABC, if $(AB)^2 - (BC)^2 = (AC)^2$, then m ($\angle$ B) .....

a) Acute **b)** Right **c)** Obtuse **d)** Straight

(4) If area of triangle 30 cm^2, its height 5 cm, then its base ..... Cm

a) 6 **b)** 12 **c)** 18 **d)** 5

(5) Projection of point (5 , 3) on X – axis is .....

a) (5 , 3) **b)** (−5 , 3) **c)** (5 , 0) **d)** (0 , 3)

(6) If the drawing scale of two similar triangles 1 : 2 and measure of one of angles of smaller triangle is 50°, then the measure of corresponding angles in greater triangle equals .....°

a) 25 **b)** 50 **c)** 100 **d)** 150

[Q2] Complete each of the following:

6) Area of Parallelogram 30 cm^2, its base 6 cm, its height .....

7) In Δ ABC right at A, $\overline{AD} \perp \overline{BC}$, then AB × ..... = BC × .....

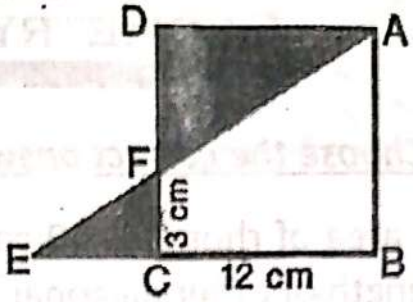
8) Area of Parallelogram equal ..... Area of triangle with common base and between two parallel lines one of them carrying this base

9) Two triangles area similar if their corresponding sides are .....

10) The median of triangle divide it into two triangles .....

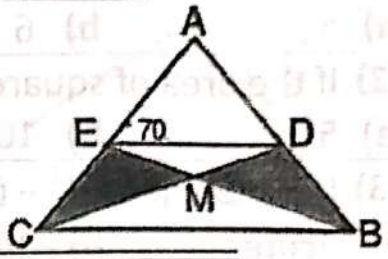
[Q3] A) In the opposite figure:

ABCD is square of side 12 cm,
CF = 3 cm, $\overline{AE} \cap \overline{CD}$ = {F}
① Prove that: Δ ADF ≃ ECF
② Find length of $\overline{EC}$



B) In the opposite figure:

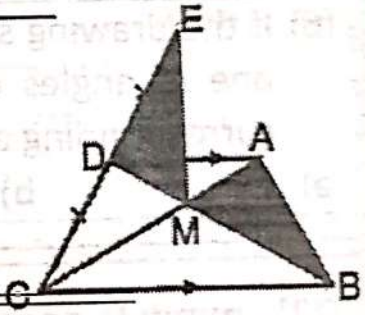
If area of Δ DBM = area of Δ CME
And m (∠ AED) = 70°
Find m (∠ ACB)



[Q4] A) The ratio between two parallel bases in a trapezium 2 : 3, and length of its middle base 30 cm, find:
① Length of its bases
② Area of trapezium if its height 24 cm

B) In the opposite figure:

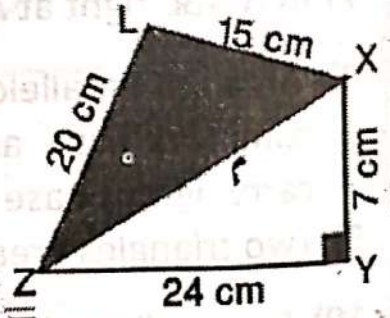
$\overline{AD}$ // $\overline{BC}$, D midpoint of $\overline{BC}$
Prove that:
Area of Δ ABM = area of Δ DME



[Q5] A) Determine the type of triangle according to its angles if its sides lengths are AB = 8 cm, AC = 6 cm, BC = 7 cm

B) In the opposite figure:

M (∠ XYZ) = 90°, $\overline{LM} \perp \overline{XZ}$, XL = 15 cm
ZL = 20 cm, XY = 7 cm, YZ = 24 cm
① Prove that: m (∠ XLZ) = 90°
② Find length of $\overline{LM}$, $\overline{XM}$



End of the questions

GEOMETRY – MODEL No 7

[Q1] Choose the correct answer:

(1) The diagonal of square whose area 50 cm^2 is ..... Cm

a) 10 b) 20 c) 30 d) 40

(2) If the ratio between two similar triangles 1 : 3 and length of sides of greater triangle is 12 cm, then the length of corresponding side in smaller triangle equals ..... cm

a) 4 b) 6 c) 12 d) 24

(3) In Δ ABC, $(AB)^2 - (BC)^2 > (AC)^2$, then $\angle$ B .....

a) Acute b) Right c) Obtuse d) Straight

(4) Length of two parallel bases in trapezium 10 cm , 6 cm, its height 5 cm, then its area = ... cm^2

a) 10 b) 30 c) 40 d) 80

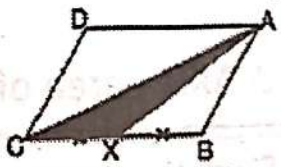
(5) If area of rhombus 48 cm^2, length of one of its diagonals 12 cm, then length of other diagonal is ..... Cm

a) 4 b) 8 c) 10 d) 16

(6) In the opposite figure:

BX = XC

Area of Δ AXC = ... area of ABCD



a) $\frac{1}{2}$ b) $\frac{1}{4}$ c) $\frac{1}{8}$ d) 2

[Q2] Complete each of the following:

6) Length of projection of line segment on straight line parallel to it ..... Length of line segment

7) Two similar polygons two third are .....

8) Two triangles on same base and its vertices on straight line parallel to base are .....

9) Projection of point (5 , 3) on y axis is point .....

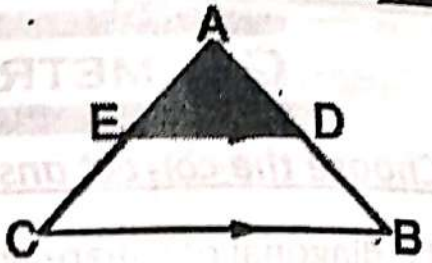
10) Two diagonals of an isosceles trapezium are .....

[Q3] A) In the opposite figure:

$\overline{DE} // \overline{BC}$, DE = 6 cm, AD : AB = 1 : 3

① Prove that: Δ ADE $\simeq$ Δ ABC

② Find length of $\overline{BC}$

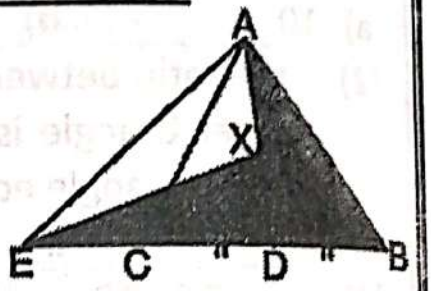


B) In the opposite figure:

Area of Δ ADB = area of Δ XDE

And DB = DC,

Prove that: XC // AE

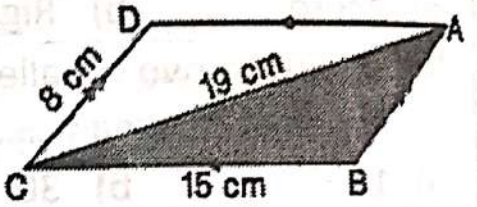


[Q4] A) In the opposite figure:

ABCD is Parallelogram,

BC = 15 cm, DC = 8 cm, AC = 19 cm

Prove that: $\angle$ ABC is obtuse angle

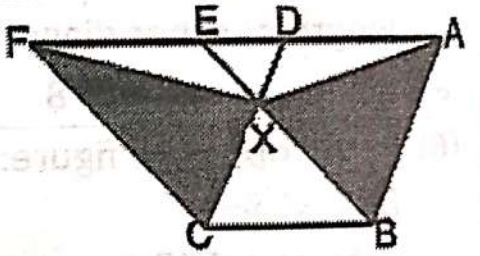


B) In the opposite figure:

ABCD is Parallelogram

Prove that:

Area of Δ AXB = area of Δ XCF



[Q5] A) Find the area of rhombus whose perimeter 60 cm and measure of one of its angles is 60°

B) In the opposite figure:

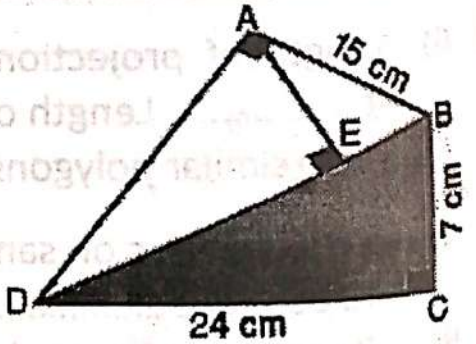
ABCD is quadrilateral, $\overline{AE} \perp \overline{BD}$

m ($\angle$ BCD) = m ($\angle$BAD) = 90°, **Find:**

① Length of $\overline{AD}$, $\overline{BD}$

② Length of projection of $\overline{AB}$ on $\overline{BD}$

③ Length of projection of $\overline{AD}$ on $\overline{AE}$



End of the questions

GEOMETRY – MODEL NO 8

[Q1] Choose the correct answer:

(1) Perimeter of rhombus of diagonals 12 cm , 16 cm is .....cm
a) 10 b) 40 c) 96 d) 192

(2) Length of projection of line segment on straight line parallel to it ..... length of original line segment.
a) > b) = c) < d) ≤

(3) Area of rectangle whose sides 8 cm , 4 cm = ...cm^2
a) 16 b) 24 c) 32 d) 64

(4) Sum of interior angles of quadrilateral = ...°
a) 180 b) 360 c) 540 d) 720

(5) Measure of exterior angle of an equilateral triangle = ...°
a) 60 b) 120 c) 180 d) 360

(6) Area of square whose perimeter 12 cm is .....cm^2
a) 72 b) 144 c) 3 d) 9

[Q2] Complete each of the following:

6) The triangles with equal bases and lay on same straight line and have common vertex are .....

7) In Δ ABC, AB = 8 cm, BC = 5 cm, AC = 4 cm, then Δ ABC is .....

8) If the length of two adjacent sides in Parallelogram are 5 cm , 9 cm, and its smaller height is 7 cm, then its area .....cm^2

9) Two triangles are similar if their corresponding sides are.....

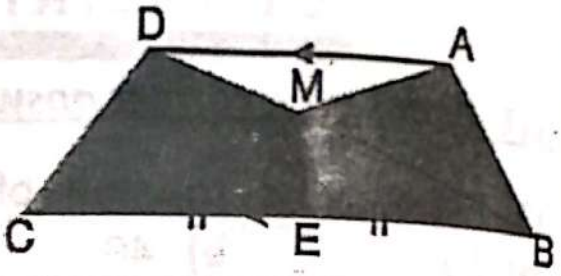
10) The area of a square formed on one of the right sides of a right–angled triangle is equal to the area of the rectangle whose dimensions project of this side on hypotenuse and the length of .....

[Q3] **A) In the opposite figure:**

$\overline{AD} \parallel \overline{BC}$, E is midpoint of $\overline{BC}$

Prove that:

Area of ABEM = area of DCEM

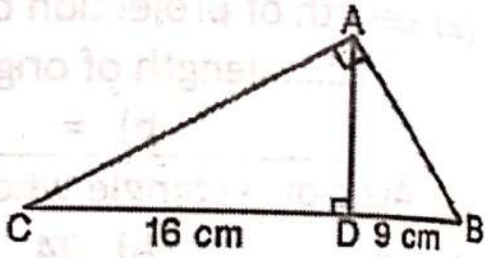


B) In the opposite figure:

Δ ABC right at A, $\overline{AD} \perp \overline{BC}$

BD = 9 cm , CD = 16 cm

Find length of $\overline{AB}$

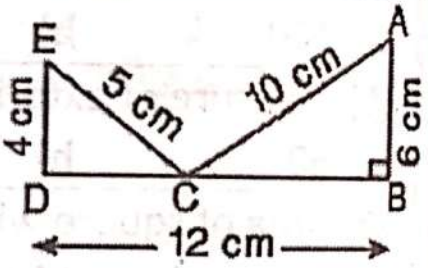


[Q4] **A) In the opposite figure:**

m ($\angle$ B) = 90°, AB = 6 cm, AC = 10 cm

ED = 4 cm, EC = 5 cm, BC = 12 cm

Prove that: m ($\angle$ D) = 90°



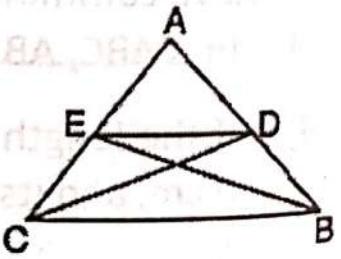
B) Two similar triangles, perimeter of the first 54 cm, lengths of sides of other triangle 5 , 6 , 7 cm, find the sides lengths of first triangle

[Q5] **A) In the opposite figure:**

Area of Δ ABE = area of Δ ACD

Prove that:

$\overline{DE} \parallel \overline{BC}$



B) Find the middle base of a trapezium whose area 110 cm^2 and its height 10 cm.

End of the questions

GEOMETRY – MODEL No 9

[Q1] Choose the correct answer:

(1) Area of square whose side 12 cm is .....cm^2

a) 36 b) 48 c) 72 d) 144

(2) In Δ ABC, if $\overline{AD} \perp \overline{BC}$, then projection of point A on $\overleftrightarrow{BC}$ is .....

a) { D } b) $\overline{BD}$ c) $\overline{CD}$ d) $\overline{BC}$

(3) Measure of exterior angle o equilateral triangle is .....°

a) 30 b) 60 c) 120 d) 360

(4) The triangle of sides 5 cm , 8 cm , 12 cm is .....triangle

a) Right b) Acute c) Obtuse d) Isosceles

(5) In Δ ABC: $(AB)^2 = (BC)^2 + (AC)^2 + 5$, then m (∠C) .....90°

a) > b) = c) < d) ≤

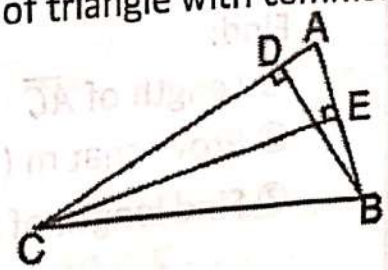
(6) The area of rhombus 100 cm^2, its diagonal 10 cm, the other diagonal is ..... cm

a) 2 b) 5 c) 10 d) 20

[Q2] Complete each of the following:

6) If the ratio between two similar triangles 2 : 3 and measure of one angle smaller triangle is 20°, then the measure of corresponding angle in greater triangle equals .....°

7) Area of Parallelogram equals ..... area of triangle with common base and lies between two parallel lines



8) In the opposite figure:
AB = 5 cm , AC = 10 cm
EC = 8 cm, then BD = ... cm

9) Sum of measures of two complementary angles is .....

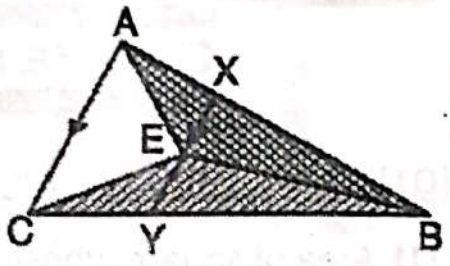
10) Two triangles are similar if their corresponding sides are .....

[Q3] A) In the opposite figure:

$\overline{AC}$ // $\overline{XY}$, F midpoint of $\overline{XY}$

Prove that:

Area of Δ ABF = area of Δ CBF



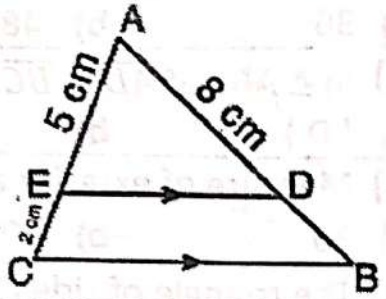
B) In the opposite figure:

DE // BC , AE = 5 cm

EC = 2 cm, AD = 8 cm

① Prove that: Δ ABC ≃ ADE

② Find length of $\overline{BD}$



[Q4] A) Area of trapezium 180 cm^2, its height 12 cm, ratio between its two parallel bases 3 : 2, find length of each one

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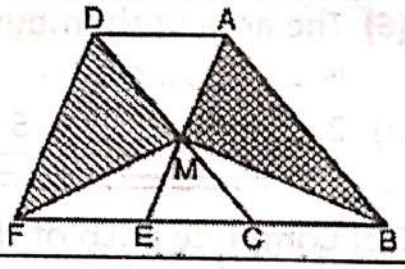
B) In the opposite figure:

ABCD, AEFD are two Parallelograms

Prove that:

Area of Δ ABM = area of Δ DFM



[Q5] In the opposite figure:

ABCD is quadrilateral, m (∠ B) = 90°

$\overline{DE} \perp \overline{AC}$, AB = 7 cm, BC = 24 cm

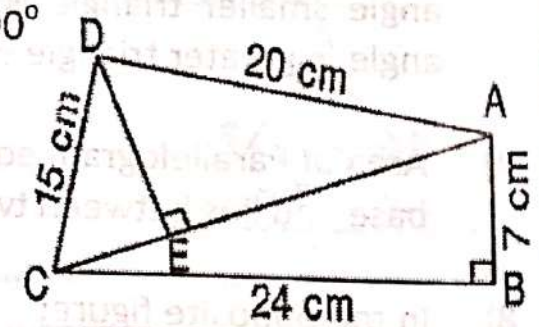
CD = 15 cm, DA = 20 cm

Find:

① Length of $\overline{AC}$

② Prove that m (∠ ADC) = 90°

③ Find length of projection of $\overline{DC}$ on $\overrightarrow{AC}$



End of the questions

GEOMETRY – MODEL NO 10

[Q1] Complete each of the following:

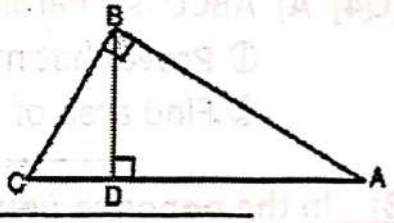
6) The area of rhombus 48 cm^2, its diagonal 12 cm, the other diagonal is ..... cm

7) In Δ ABC, AB = 5 cm, BC = 7 cm, CA = 11 cm, then m (∠B) = ...

8) Two similar triangles, sides of first one 4 , 6 , 8 cm, perimeter of the other 72 cm, then the sides of the other ....., ..., ... cm

9) The median of triangle divide it into two triangles .....

10) In the opposite figure:
Δ ABC, m (∠ABC) =90°, $\overline{BD} \perp \overline{AC}$
① Then projection of $\overline{AB}$ on $\overline{AC}$ is .....
② $(BC)^2$ = ... × .....



[Q2] Choose the correct answer:

(1) Area of triangle 24 cm^2, its height 8 cm, then its base .....cm
a) 2 b) 3 c) 6 d) 16

(2) ABCD is a Parallelogram, E ∈ D, area of Δ AEB = 20 cm^2, then area of Parallelogram ABCD = ...cm^2
a) 10 b) 20 c) 30 d) 40

(3) A trapezium length of its parallel bases 5 cm , 7 cm, its area 42 cm, then its height = ... cm
a) 5 b) 6 c) 7 d) 12

(4) In Δ ABC, AB = 7 cm , BC = 5 cm , AC = 4 cm, then ∠C .....
a) Acute b) Obtuse c) Right d) Straight

(5) If length of rectangle 12 cm , its diagonal 13 cm, the its area .....
a) 144 cm^2 b) 169 cm^2 c) 156 cm^2 d) 60 cm^2

[Q3] A) In the opposite figure:

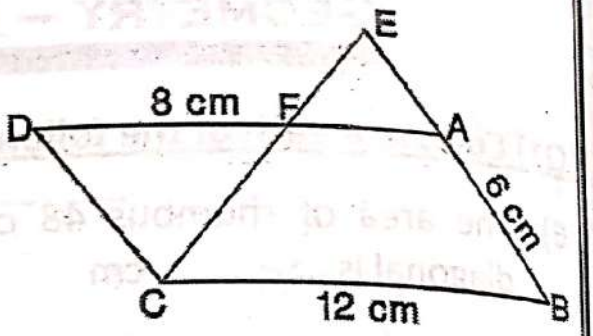
ABCD is Parallelogram, E $\in \overrightarrow{BA}$

$\overline{CE} \cap \overline{AD}$ = { F }, BC = 12 cm,

AB = 6 cm, FD = 8 cm, FC = 7 cm

① Prove that: Δ AEF $\simeq \Delta$ DCF

② Find length of $\overline{EB}$, $\overline{EF}$

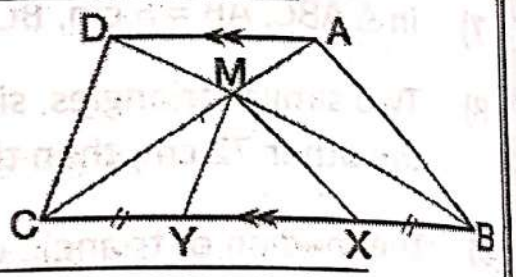


B) In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, $\overline{AC} \cap \overline{BD}$ = { M },

X,Y $\in \overline{BC}$, BX = CY, prove that:

Area of ABXM = area of DCYM



[Q4] A) ABCD is a Parallelogram, AB = 8 cm, AC = 20 cm, BD = 12 cm,

① Prove that m ($\angle$ ABD) = 90°

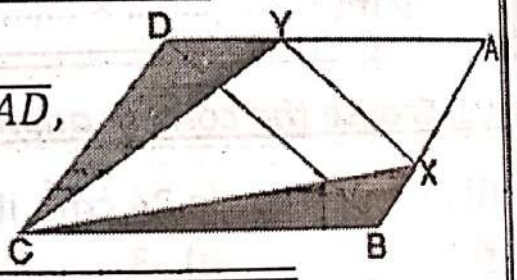
② Find area of Parallelogram ABCD

B) In the opposite figure:

ABCD is Parallelogram, X $\in \overline{AB}$, Y $\in \overline{AD}$,

Area of Δ BCX = area of Δ CYD

Prove that: $\overline{XY}$ // $\overline{BD}$



[Q5] In the opposite figure:

ABCD is quadrilateral,

m ($\angle$ BCD) = m($\angle$BAD) = 90°

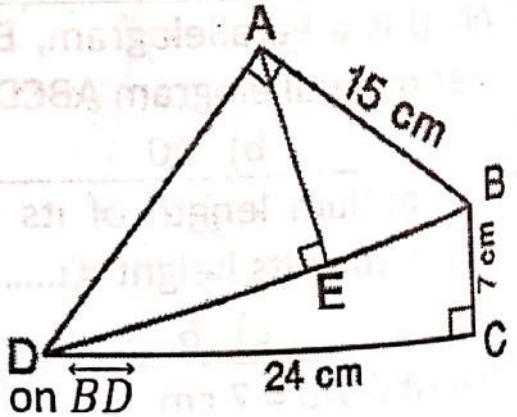
$\overline{AE} \perp \overline{BD}$, BC = 7 cm, CD = 24 cm

AB = 15 cm, Find:

① Length of $\overline{BD}$, $\overline{AD}$

② Find length of projection of $\overline{AB}$ on $\overleftrightarrow{BD}$

③ Find length of projection of $\overline{AD}$ on $\overleftrightarrow{AE}$



End of the questions

Model 1 Geometry

PrepP 2 T2
2020-2021

Q1 (choose)

1) $A = \frac{1}{2}(d)^2 = \frac{1}{2}(8)^2 = 32\ cm^2$

2) $5^2 = 25$ $\quad$ $(4)^2 + (3)^2 = 25$

$\therefore (5)^2 = (4)^2 + (3)^2$

* Right Traingle

3) Perpendicular

4) A) $_{Rhombus} = \frac{1}{2} d_1 d_2$

$40 = \frac{1}{2}(10)(d_2)$

$d_2 = 8\ cm$

5) A) $_{Rectangle} = 4 \times 9 = 36\ cm^2$

A) $_{Rhombus} = \frac{1}{2}(12) \times 5 = 30\ cm^2$

$A_{Rectangle} > A_{Rhombus}$ [a]

6) $\frac{\text{small length}}{\text{large } \sim} = \frac{\text{small Perimeter}}{\text{large } \sim}$

$\frac{1}{3} = \frac{15}{X} \Rightarrow X = 3 \times 15$

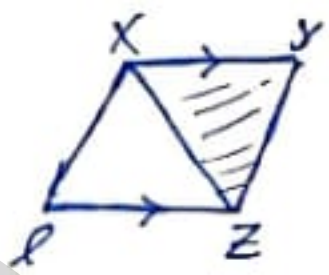
$= 45\ cm$

Q2 Complete

1) $A(\Delta XYZ) = 18\ cm^2$

$A(\square XYZL) = 18 \times 2$

$= 36\ cm^2$



2) $(AB)^2 - (AC)^2 < (BC)^2$

$(AB)^2 < (BC)^2 + (AC)^2$

Then $\angle C$ is Acute Angle

3) Parallel

4) 3

5) Parallel to this Base

Q3 (3) (A)

[a] ΔNBC & $\square ABCD$

$\overline{BC}$ (Common Base) & $C\overline{B} \parallel D\overline{A}$

& $N \in DA$ $\quad \therefore A(\Delta NBC) = \frac{1}{2} A(\square ABCD)$ (1)

$\because$ in $\square(ABCD)$, $\square ABEF$

$(\overline{BA})$ Common Base

C, D, E, F on same straight line

$\therefore A(\square ABCD) = A(\square ABEF)$ (2)

From (1) & (2) $\quad \therefore A(\Delta NBC) = A(\square ABEF)$

(B) $\because \Delta\Delta (ABC), (AED)$

$\angle A$ (Common angle)

$m(AED) = m(ACB)$

$m(ADE) = m(ABC)$

$\therefore \Delta ABC \sim \Delta ADE$

$\therefore \frac{AB}{AD} = \frac{BC}{DE} = \frac{AC}{AE} \Rightarrow \frac{AB}{4} = \frac{6}{3}$

$AB = \frac{24}{3} = 8\ cm$ & $\overline{EB} = 8 - 3 = 5\ cm$

Q4 (a) Assume

First Base $= 3X$ & second Base $= 2X$

$\because A = \frac{1}{2}(B_1 + B_2) * H \Rightarrow 180 = \frac{1}{2}(5X) * 12$

$\therefore 180 = 30X \Rightarrow X = 6$

$\therefore B_1 = 6 \times 3 = 18\ cm$, $B_2 = 2 \times 6 = 12\ cm$

(B) $\because \angle A = 90°$ & $\overline{AD} \perp \overline{BC}$

$\therefore (AD)^2 = DB \times DC \Rightarrow AD = \sqrt{9 \times 16} = 12\ cm$

$AB = \sqrt{DB \times CB} = \sqrt{9 \times 25} = 15\ cm$

$AC = \sqrt{CD \times CB} = \sqrt{16 \times 25} = 20\ cm$

Q5 [a] $(YZ)^2 = (20)^2 = 400$

$(XY)^2 + (XZ)^2 = (12)^2 + (16)^2 = 400$

$\therefore (YZ)^2 = (XY)^2 + (XZ)^2$

$\therefore \Delta XYZ$ is right Traingle in $\angle X$

(B) $\because \overline{ED} \parallel \overline{AC}$ & $\overline{AC}$ (Common Base)

$\therefore A(\Delta ACM) = A(\Delta ACE)$

$\therefore A(ACE) = \frac{1}{2} * 2 * 5 = 5\ cm^2$

$\therefore A(ACM) = 5\ cm^2$

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(1)

Model ② Geometry

Q1

[1] $A_{\text{Rhombus}} = \frac{1}{2} d_1 d_2 = \frac{1}{2}(6)(12) = 60 \text{ cm}^2$

[2] $(AC)^2 = (AB)^2 - (BC)^2$

$\therefore (AB)^2 = (AK)^2 + (BC)^2$

$\therefore m(< B) > 90$

[3] Parallel

[4] $D = \sqrt{2(\text{Area of } \square)} = \sqrt{2 \times 50}$

$= 10 \text{ cm}$

[5] $=$

[6] $m(\hat{A}) = m(\hat{X}) = 80°$
$m(\hat{B}) = m(\hat{y}) = \cdots$
$m(\hat{z}) = m(\hat{z}) = 50°$
$m(\hat{D}) = m(\hat{L}) = 120$

$\Rightarrow m(\hat{B}) = m(\hat{y})$
$= 360 - 80 - 50 - 120$
$= 110°$

Q2

[1] $\frac{AB}{XY} = \frac{BC}{YZ} = \frac{AC}{XZ} \Rightarrow \frac{2}{5} = \frac{8}{XZ}$

$XZ = \frac{5 \times 8}{2} = 20 \text{ cm}$

[2] $A_{\square} = (8)^2 = 64 \text{ cm}^2$

[3] $A \triangle ABC = 2 (\text{Area of } ABD)$

$= 2(20)$

$= 40 \text{ cm}^2$

[4] Congurent

[5] 1

Q3 A)

$\overline{DA} \parallel \overline{BC}$ & $\overline{AD}$ Common Base

$\therefore$ Area of $\triangle ADB$ = A of $\triangle ADC$

By deleting A of ABD from each other

$\therefore$ A of $\triangle AMB$ = A of $\triangle DMC$ (1)

$\therefore$ A of $\triangle ABM$ = A of $\triangle MCE$ (2)

$\therefore$ A of $\triangle CMD$ = A of $\triangle CME$

& $\overline{MC}$ Common Base

$\therefore \overline{MC} \parallel \overline{DE}$

$\overline{AB} \parallel \overline{DC}$ & $\overline{AC}$ & $\overline{BD}$ transversal

$\therefore m(\hat{A}) = m(\hat{C})$ alternate

$m(\hat{C}) = m(\hat{D})$ ~

and $m(B\hat{M}A) = m(C\hat{M}D)$ V.O.A

$\therefore \triangle MAB \sim \triangle MCD$

$\frac{MA}{MC} = \frac{AB}{CD} = \frac{MB}{MD} \Rightarrow \frac{3}{MC} = \frac{4}{8}$

$\therefore MC = \frac{3 \times 8}{4} = 6 \text{ cm}$

Q4 A) $A_{\text{Trapezium}} = \frac{1}{2}(B_1 + B_2) \times H$

$80 = \frac{1}{2}(15 + B_2) \times 8$

$\therefore \frac{80}{4} = 15 + B_2 \Rightarrow B_2 = 5 \text{ cm}$

B) $\because m(\hat{A}) = 90°$ & $\overline{AD} \perp \overline{BC}$

$\therefore BC = \sqrt{(12)^2 + (16)^2} = 20 \text{ cm}$

$AD = \frac{AB \times AC}{CB} = \frac{12 \times 16}{20} = 9.6 \text{ cm}$

Q5 [a] $(MN)^2 = (7)^2 = 49$

$(LM)^2 + (LN)^2 = (5)^2 + (6)^2 = 61$

$\therefore (MN)^2 < (LM)^2 + (LN)^2$

$\therefore \triangle LMN$ Acute-Angle-triangle

B) $\because \overline{DE} \parallel \overline{AC}$ & $(\overline{ED})$ Common Base

$\therefore$ A of $\triangle (FDE)$ = A of $\triangle EDC$

$\therefore$ A of $\triangle EDC = \frac{1}{2} \times 8 \times 5 = 20 \text{ cm}^2$

$\therefore$ A of $\triangle FDE = 20 \text{ cm}^2$

#

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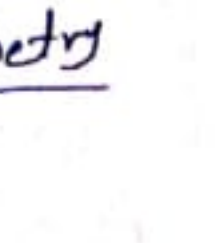
model [3] Geometry

① [1] Parallel
[2] A of $\Delta = \frac{1}{2}(8)(5) = 20\ cm^2$
③ equal
④ Rhombus
⑤ Congruent
⑥ $A_{\square} = \frac{1}{2}d^2 = \frac{1}{2}(8)^2 = 32\ cm^2$

---

② (1) it's Digonal

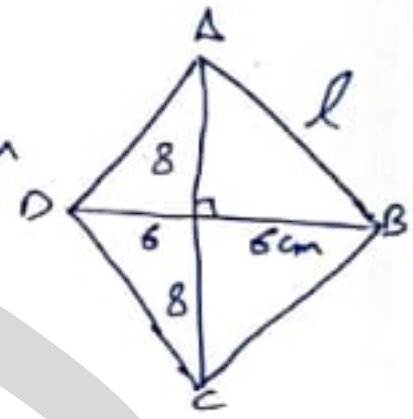
A) $_{Rhomuby} = \frac{1}{2}d_1 d_2$



(2) $(yz)^2 = (xy) + (xz)^2 \Rightarrow m(\hat{x}) = 9^0$
(3) FA} oR Point A
(4) $\frac{P\Delta ABC}{P\Delta xyz} = \frac{AB}{xy} = \frac{5}{3}$
(5) middle Base $= \frac{B_1+B_2}{2} = \frac{10+6}{2} = 8$ cm

---

③ A) A) $_{Rhomby} = \frac{1}{2}d_1 d_2$
$= L \times H$
$\therefore 96 = l * H$
$l = \sqrt{(8)^2+(6)^2} = 10cm$
$\therefore 96 = 10 \times H$
$H = 9.6$ cm



B) $\because m(\hat{B}) = 90$ S $\overline{BA} \perp \overline{Ac}$
$\therefore (BD)^2 = DA \times Dc$
$(12)^2 = 9 \times Dc$
$Dc = \frac{144}{9} = 16$ cm

---

④ A) $\because \Delta ABD$
$BD = \sqrt{(20)^2+(15)^2} = 25$ cm

$\because \Delta DBC$
$(BD)^2 = (25)^2 = 625$
$(DC)^2 + (CB)^2 = (24)^2 + (7)^2 = 625$
$\therefore (BD)^2 = (DC)^2 + (CB)^2$
$\therefore m(\hat{C}) = 90^0$ #

B) A) $= \frac{1}{2}(B_1+B_2) * H$
Trapezium
$= \frac{1}{2}(8+10) \times 6 = 54\ cm^2$

---

⑤ A) $\because \overline{BA} \parallel \overline{CD}$
S $\overline{AC}$ S $\overline{BD}$ transversal
$\therefore m(\hat{A}) = m(\hat{C})$, $m(\hat{B}) = m(\hat{D})$ $\Rightarrow$ alternate
$m(B\hat{E}A) = m(C\hat{E}D)$ V.O.A (vertically opposite angle)
$\therefore \Delta ABE \sim \Delta CDE$
$\frac{AB}{CD} = \frac{BE}{DE} = \frac{AE}{CE} \Rightarrow \frac{2}{DE} = \frac{3}{6}$
$\overline{DE} = \frac{12}{3} = 4$ cm

B) $\because A$ of ABCD = A of ABCE
with Deleting A of Δ ACB
with Both Side
$\therefore$ A of ΔCAD = A of ΔCAE
ℓ $\overline{CA}$ (Common Base)
ℓ Two Traingles on Same side
from it's Base
$\therefore \overline{AC} \parallel \overline{ED}$ #

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model (4) Geometry

Q1

1) $A_D = \frac{1}{2}d^2 = \frac{1}{2}(10)^2 = 50\ cm^2$

2) $> 90°$

3) FD3

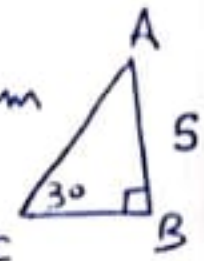
4) $A)_{Rhombus} = \frac{1}{2}d_1 d_2 \Rightarrow 42 = \frac{1}{2}(12)d_2$

$d_2 = 7\ cm$

5) A) $\square$ = Smaller Height * Big length

$= 4 \times 9 = 36\ cm^2$

6) $\overline{AC} = 2\,\overline{AB} = 2(5) = 10\ cm$



Q2

1] 80° (Angles equal in measure)

2] lengths Proportion in Length

3) 180°

4) $m(\hat{X}) = 180 - (30+50)$

$= 100°$

5) equal (=)

6) equal in measure

OR

5) "Congruent"

Q3

A) $\overline{XY}$ Common Base $\S\ \overline{XY} \parallel \overline{AB}$

$\therefore A$ of $\Delta XYZ = \frac{1}{2} A\square XYBA$ (1)

$\because \overline{XY}$ Common Base, $\overline{XY} \parallel \overline{CD}$

$\therefore A$ of $XYC = \frac{1}{2} A\square XYCD$ (2)

with adding (sum) (1) & (2)

$\therefore A$ of $XZYC = \frac{1}{2} A$ of $ABCD$

B) $\overline{BC} \parallel \overline{ED}$ S ($\overline{AC}$ & $\overline{AB}$) are Transversal

$\therefore m(A\hat{D}E) = m(\hat{B})$ ⇒ with Corresponding Axiom

$m(A\hat{E}D) = m(\hat{C})$

$m(\hat{A})$ common Angle

$\therefore \Delta ABC \sim \Delta ADE$

$\frac{AB}{AD} = \frac{AC}{AE} \Rightarrow \frac{AB}{8} = \frac{7}{5}$

$AB = \frac{56}{5} = 11.2\ cm$

Q4 (a) (A) $A_{\square} = \frac{1}{2}(B_1 + B_2) * H$

$= \text{middle Base} * H$

$60 = (12) * H \Rightarrow H = \frac{60}{12} = 5\ cm$

$B_1 = 2B_2$

$\Rightarrow 60 = (\frac{1}{2})(B_1 + B_2) * H$

$60 = \frac{1}{2}(2B_2 + B_2) * 5$

$\therefore 24 = 3B_2 \Rightarrow B_2 = 8\ cm$

$B_1 = 16\ cm$

Q5 A)

$(AB)^2 = (10)^2 = 100$

$(AC)^2 + (BC)^2 = (6)^2 + (8)^2 = 100$

$\therefore \Delta ABC$ is Right Angle triangle

In ($\hat{C}$)

$\boxed{(AB)^2 = (AC)^2 + (BC)^2}$

B) $\because A$ of $\Delta ABE = A$ of ΔADC

with deleting A of ΔADE

$\therefore A$ of $\Delta EDB = A$ of ΔEDC

S $\overline{ED}$ (Common Base) &

Two Triangles in same side

from id's Base

$\therefore \overline{DE} \parallel \overline{BC}$ //

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model (5) Geometry

Q1 ① Half

② $H = \frac{2(A)}{B} = \frac{2(36)}{9} = 8$ cm

③ =

④ $A = \frac{1}{2}d^2 = \frac{36}{2} = 18$ cm^2

⑤ 180°

⑥ one

Q2 [1] equal in Area

[2] $(AC)^2 = 100$, $(AB)^2 + (BC)^2 = 100$

$\therefore m(\hat{B}) = 90°$ $\Rightarrow m(\hat{A})$ is Acute

③ $B = \frac{A}{H} = \frac{42}{6} = 7$ cm

④ equal in measure (OR) Congruent

⑤ Congruent

Q3 $\because \overline{AD} \parallel \overline{BC}$, $(\overline{AD})$ Common Base

$\therefore$ A of ΔADB = A of ΔADC

By Deleting A) of ΔADM From each side

$\therefore$ A of ΔAMB = A of ΔDMC ①

$\because \overline{EB} = \overline{CF}$, $(M$ Common Angle)

$\therefore$ A of ΔMBE = A of ΔMCF ②

By adding ① , ②

$\therefore$ A of ABEM = A of DCFM

③ $m(\hat{A}) = 90°$, $\overline{AD} \perp \overline{CB}$

$\therefore (AB)^2 = (DB) * BC \Rightarrow BC = \frac{(15)^2}{9}$

$\therefore BC = 25$ cm

Q4 A) $\because \Delta ABC$, $m(\hat{B}) = 90°$

$\therefore AC = \sqrt{16+9} = 5$ cm

$\therefore (AD)^2 = (13)^2 = 169$

$(AC)^2 + (DC)^2 = 25 + 144 = 169$

$\therefore (AD)^2 = (AC)^2 + (CD)^2$

$\therefore m(A\hat{C}D) = 90°$ «Right Angle»

B) $A = \frac{1}{2}(B_1 + B_2) * H$

$H = \frac{2A}{B_1 + B_2} = \frac{2 \times 40}{7+9} = 5$ cm

Q5 A) In $\Delta\Delta ABC, ADE$

$\because m(A\hat{D}M) = m(\hat{B})$

$m(\hat{A})$ common angle

$\therefore m(A\hat{E}D) = m(\hat{C})$

$\therefore \Delta ABC \sim \Delta ADE$

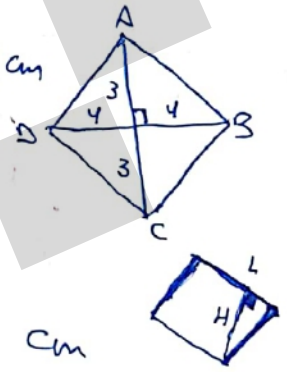
$\frac{AB}{AD} = \frac{AC}{AE} \Rightarrow \frac{8}{4} = \frac{AC}{5} \Rightarrow AC = 10$ cm

$\therefore DC = 10 - 4 = 6$ cm #

B) $A)_{\diamond} = \frac{1}{2} d_1 d_2$

$= \frac{1}{2}(8)(6) = 24$ cm^2

length $= \overline{AB} = \sqrt{9+16} = 5$ cm



$A = \text{length} * H$

$24 = 5 * H$

$H = \frac{24}{5} = 4.8$ cm

model (6) Geometry

Q1 ① $d_2 = \frac{2A}{d_1} = \frac{2\times40}{10} = 8$ cm

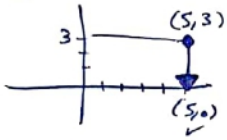
② $d = \sqrt{2A} = \sqrt{100} = 10$

③ $(AB)^2 = (AC)^2 + (BC)^2$

$\therefore m(\hat{B})$ is Acute

④ $B = \frac{2A}{H} = \frac{2(30)}{5} = 12$ cm

⑤ $(5,0)$



⑥ 50°

Q2 ① $H = \frac{30}{6} = 5$ cm

② $AB \times \underline{AC} = BC \times \underline{AD}$

③ Twice

④ Proportion in length

⑤ equal in Area

Q3 (A) $DF = 12-3 = 9$ cm

$\because \Delta DAF \Rightarrow m(\hat{D}) = 90$

$\therefore FA = \sqrt{(12)^2+(9)^2} = 15$ cm

$\because ABCD$ is square $\Rightarrow \overline{AD} \parallel \overline{BC}$

$\because \overline{AE}$ is transversal

$\therefore m(\hat{D}) = m(f\hat{C}E) = 90^\circ$ Alternate vertically opposite Angles (V.O.A)

$\therefore m(D\hat{F}A) = m(E\hat{f}C)$

$\therefore \Delta ADF \simeq \Delta ECf$

$\frac{AD}{EC} = \frac{DF}{Cf} \Rightarrow \frac{12}{EC} = \frac{9}{3}$

$EC = \frac{12\times3}{9} = 4$ cm

(B) $\because A$ of $\Delta DBM = A$ of ΔCME

By adding A of ΔMDE for each other

$\therefore A$ of $\Delta EDB = A$ of EDC

$\ell(\overline{ED})$ common Base ℓ in same side from the Base

$\therefore \overline{ED} \parallel \overline{CB}$ & $(\overline{AC})$ is Transversal

$\therefore m(A\hat{E}D) = m(A\hat{C}B) = 70^\circ$ By Corresponding

Q4 (A) Assume first Base $= 2X$

Second Base $= 3X$

middle Base $= \frac{2X+3X}{2} = \frac{30}{1}$

$5X = 60 \Rightarrow X = 12$

$\therefore$ First Base $= 2X = (2\times12) = 24$ cm

Second " $= 3X = (3\times12) = 36$ cm

$A = M.B \times H = 30 * 24 = 720$ cm^2

(B) In ΔD & DEM & DMO

$\overline{DM}$ is a medium (D is a midpoint of $\overline{BC}$)

$\therefore A$ of $\Delta DME = A$ of ΔDMO (1)

$\because \overline{DA} \parallel \overline{OB}$ & $(\overline{DA})$ Common Base

$\therefore A$ of $\Delta DAB = A$ of ΔDAO

By deleting A of DAM from each other

$\therefore A$ of $MAB = A$ of ΔMDO (2)

From (1) & (2) $\Rightarrow \therefore A$ of $\Delta ABM = A$ of ME

Q5 (A) $(AB)^2 = 64$ & $(AC)^2 + (BC)^2 = 85$

$\therefore (AB)^2 < (AC)^2 + (BC)^2 \Rightarrow \therefore \Delta ABC$ is Acute triangle - Angles

(B) $\because \Delta XYZ \Rightarrow m(\hat{y}) = 90^\circ$

$\therefore XZ = \sqrt{(7)^2+(24)^2} = 25$ cm

$(XZ)^2 = 625$ & $(LX)^2 + (LZ)^2 = (15)^2 + (20)^2 = 625$

$\therefore m(\hat{L}) = 90^\circ \Rightarrow LM = \frac{15\times20}{25} = 12$ cm

$\overline{XM} = \frac{(15)^2}{25} = 9$ cm

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model (7) Gometry

Q1 ① $d=\sqrt{2}A=\sqrt{100}=10$

② $1:3$
$X:12 \Rightarrow X=\frac{12}{3}=4$ cm

③ $(AB)^2 > (AC)^2+(BC)^2$
$\Leftrightarrow$ B is Acute

④ $A=\frac{1}{2}(B_1+B_2)*H$
$=\frac{1}{2}(10+6)*5=40$ cm^2

⑤ $A=\frac{1}{2}d_1d_2=\frac{1}{2}(12)d_2=48$
$d_2=8$ cm

⑥ $\frac{1}{4}$

Q2 ① equal

② Similar

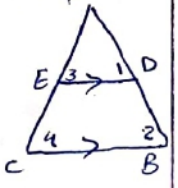
③ equal in Area

④ (0, 3)

⑤ equal in length / Congruent

$\because \overline{DE} \parallel \overline{BC}$ & $\overline{AB}$ & $\overline{AC}$ transversals

Q3 Ⓐ $m(\hat{1})=m(\hat{2})$
$m(\hat{3})=m(\hat{4})$
$m(\hat{A})$ common Angle



$\therefore \Delta ADE \sim \Delta ABC$

$\frac{AD}{AB}=\frac{DE}{BC} \Rightarrow \frac{1}{3}=\frac{6}{BC}$

$BC=18$ cm

Ⓑ $\because A$ of $\Delta ADB = A$ of ΔXDE ①

$\because AD$ is a median in ΔABC

$\therefore A$ of $\Delta ABD = A$ of ΔADC ②

From ① & ②

$\therefore A$ of $\Delta XDE = A$ of ΔADC

By deleting A of ΔXDC from each other

$\therefore A$ of $\Delta CXA = A$ of ΔCXE

$\because CX$ common Base and two Traingles on the same Side from the Base $\therefore \overline{XC} \parallel \overline{AE}$

Q4 $\because ABCD$ Parallelogram

$\therefore AB=CD=8$ cm $\Rightarrow \because \Delta ABC$

$(AC)^2=361$ $\S$ $(AB)^2+(BC)^2=289$

$\therefore (AC)^2 > (AB)^2+(BC)^2$

$\therefore \Delta ABC$ is obtuse in $m(A\hat{B}C)$

Ⓑ $\because ADCB$ Parallelogram

$\ell(\overline{AB})$ common Base $\S X \in \overline{DC}$

$\therefore A$ of $\Delta AXB = \frac{1}{2} A$ of $\square ADCB$ ①

$\because EBCf$ is Parallelogram

$\overline{Cf}$ common Base $\ell X \in \overline{EB}$

$\therefore A$ of $\Delta FXC = \frac{1}{2} A$ of $\square EBCf$ ②

$\because A$ of $ADCB = A$ of $EBCf$ ③

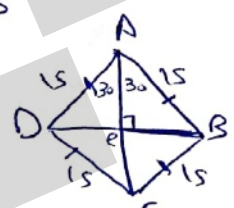
have [$\overline{BC}$ common Base $\ell \overline{CB} \parallel \overline{AF}$]

$\therefore$ From ① & ② & ③

$\therefore A$ of $AFX = A$ of AXB

Q5 Ⓐ $P_{\square}=60$ cm

$\ell=\frac{60}{4}=15$ cm



$\because$ in ΔABD [$AB=AD$] ℓ $AE \perp BD$ $\because m(e\hat{A}B)=m(e\hat{A}D)=\frac{60}{2}=30°$

$\because eB=\frac{15}{2}=7.5 \Rightarrow BD=2*7.5=15$ cm

$eA=\sqrt{(15)^2-(7.5)^2}=13$ cm $\Rightarrow AC=26$ cm

$\therefore A=\frac{1}{2}(15)(26)=195$ cm^2

Ⓑ $\because \Delta BCD \rightarrow m(\hat{C})=90° \Rightarrow DB=\sqrt{(7)^2+(24)^2}$

$DB=25$ cm $\Rightarrow \because m(\hat{A})=90° \ell A\overline{E} \perp \overline{DB}$

$AD=\sqrt{(25)^2-(15)^2}=20$ cm

* length of Projection of $\overline{AB}$ on $\overline{BD}=\overline{EB}$

$EB=\frac{(15)^2}{25}=9$ cm

* length of Projection of $\overline{AD}$ on $\overline{AE}=AE$

$AE=\frac{15*20}{25}=12$ cm #

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Model (8) Geometry

Q1 ① $\ell = \sqrt{(8)^2+(6)^2} = 10$ cm

$P = 4\ell = 40$ cm

② =

③ $A = 8 \times 4 = 32$ cm^2

④ 360°

⑤ 120°

⑥ $P = 12 \Rightarrow S = 3$ cm

$A = S^2 = 9$ cm^2

Q2 ① ② equal in Area

② $(AB)^2 = 64$ & $(BC)^2 + (AC)^2 = 41$

Then ΔABC is obtus Triangle

Angle in $(\hat{C})$

③ $A = 9 \times 7 = 63$ cm^2

④ Proportion in length

⑤ hypotenuse.

Q3 $\Rightarrow \overline{ME}$ is a median in $\Delta MBC \Rightarrow$

$\therefore A$ of $\Delta MEB = A$ of ΔMEC ①

$\because \overline{AD} \parallel \overline{BC}$ & $(\overline{DA})$ common Base

$\therefore A$ of $\Delta DAB = A$ of ΔADC

By deleting A of ΔADM from each other

Then $\Rightarrow \therefore A$ of $\Delta AMB = A$ of ΔDMC ②

By adding ① & ②

$\therefore A$ of ABEM $= A$ of DCEM

B $\because m(\hat{A}) = 90$ & $\overline{AD} \perp \overline{CB}$

$\therefore AD = \sqrt{9 \times 16} = 12$ cm

$AB = \sqrt{BD \times BC} = \sqrt{9 \times 25}$

$= 15$ cm

Q4 $\because \Delta CAB \rightarrow m(\hat{B}) = 90$

$\therefore CB = \sqrt{(10)^2 - (6)^2} = 8$ cm

$\therefore DC = 12 - 8 = 4$ cm

$\therefore (EC)^2 = 25$ & $(DE)^2 + (DC)^2 = 25$

$\therefore (EC)^2 = (DE)^2 + (DC)^2$

$\therefore \Delta EDC$ is Right - Traingle Angle in $(\hat{D}) \Rightarrow m(\hat{D}) = 90^\circ$

B

				Perimeter
first Δ	AB	BC	AC	54
other Δ	5	6	7	18

$\therefore AB = \frac{5 \times 54}{18} = 15$ cm

$BC = \frac{6 \times 54}{18} = 18$ cm

$AC = \frac{7 \times 54}{18} = 21$ cm

Q5 $\because A$ of $\Delta ABE = A$ of ΔACD

By deleting A of ΔADE from each other Then

$\therefore A$ of $\Delta EDB = A$ of ΔEDC

$(\overline{ED})$ common Base and the two Traingles are on the same Side

Then $\overline{ED} \parallel \overline{BC}$

B $A =$ Middle Base $* H$

$110 = M.B * 10$

$M.B = 11$ cm

#

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model (9) Geometry

(1) ① $A = (12)^2 = 144$

② ED ③

③ 120°

④ $(12)^2 = 144$ ، $(5)^2 + (8)^2 = 89$

obtuse Triangle

⑤ $m(\hat{C}) > 90^\circ$

⑥ $d_2 = \frac{2A}{d_1} = \frac{2(100)}{10} = 20$ cm

(2) ① 20°

② Twice OR Double

③ $\frac{1}{2}(AB)(CE) = \frac{1}{2} AC * BD$

$\therefore BD = \frac{5 \times 8}{10} = 4$ cm

④ 90° (Complementary)

if Supplementary $= 180^\circ$

⑤ Proportion in length

(3) $\overline{BE}$ is ameduim in ΔBXY

$\therefore$ A of ΔXEB = A of ΔEyB ①

$\because \overline{AC} \parallel \overline{Xy}$ ($XE = \overline{Ey}$) & A, C on the $\overline{AC}$ OR ($A, C \in \overline{AC}$)

$\therefore$ A of ΔEXA = A of ΔEyC ②

By adding ① & ②

$\therefore$ A of ΔABF = A of ΔCBF

(B) Repeated Idea (model 4 [3 B])

$\frac{AB}{AD} = \frac{AC}{AE} \Rightarrow \frac{AB}{8} = \frac{7}{5}$

$AB = 11.2$ cm

$BD = 11.2 - 8 = 3.2$ cm

(4) ① Assume length of the $B_1 = 3X$ & $B_2 = 2X$

$A = \left(\frac{B_1 + B_2}{2}\right) * H$

$180 = \frac{5X}{2} * (12)$

$5X = \frac{180}{6} = 30 \Rightarrow X = 6$ cm

$B_1 = 6(3) = 18$ cm

$B_2 = 6(2) = 12$ cm

(B) $\because$ ABCD, AEFD are Parallelograms

$\overline{AB} \parallel \overline{DC}$ ($\overline{AB}$ common Base)

$\therefore$ A of $\Delta ABM = \frac{1}{2}$ A of $\square ABCD$ ①

$\because \overline{DF} \parallel \overline{AE}$ ($\overline{DF}$ common Base)

$\therefore$ A of $\Delta DFM = \frac{1}{2}$ A of $\square DAEF$ ②

From ① & ②

$\therefore$ A of ΔABM = A of ΔDFM

(5) $\because \Delta ABC$, $m(\hat{B}) = 90^\circ$

$\therefore AC = \sqrt{(7)^2 + (24)^2} = 25$ cm

$(AC)^2 = 625$ ، $(DA)^2 + (DC)^2 = 625$

$\therefore (AC)^2 = (DA)^2 + (DC)^2$

$\therefore \Delta DAC$ is Right-angle-Triangle In $m(\hat{D})$ & $\because \overline{DE} \perp \overline{CA}$

$\therefore$ Projection of $\overline{DC}$ on $\overline{AC}$

$IS = CE = \frac{(CD)^2}{AC} = \frac{(15)^2}{25}$

$= 9$ cm

#

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model (10) Geometry

(1) (1) $d_2 = \frac{2A}{d_1} = \frac{2(48)}{12}$

$= 8$ cm

(2) $(CA)^2 = 121$,

$(AB)^2 + (BC)^2 = 74$

$\therefore m(\hat{B})$ is obtuse

(3)

			Perimeter
4	6	8	18
x	y	z	72

$x = 16$ cm

$y = 24$ cm

$z = 32$ cm

(4) equal in Area

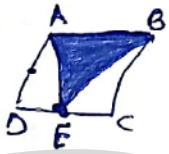
(5) (1) $\overline{DA}$ or $\overline{AD}$

(2) $\overline{CD} \perp \overline{CA}$

(2) (1) $B = \frac{2A}{H} = \frac{2(24)}{8}$

$= 6$ cm

(2) A of $\square = 40$ cm^2



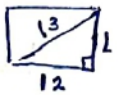
(3) $H = \frac{2A}{(B_1 + B_2)}$

$= \frac{2(42)}{5+7} = 7$ cm

(4) $m(C)$ obtuse

(5) $L = 5$ cm

$A = 5 \times 12 = 60$ cm^2



(3) (A) ABCD is $\square$

$\therefore AB = \overline{CD} = 6$ cm

, $FA = 12 - 8 = 4$ cm

$\overline{AD} \parallel \overline{BC}$, $\overline{EB}$ transversal

$\therefore m(\hat{B}) = m(\hat{EAF})$ Corresponding

$\therefore m(\hat{B}) = m(\hat{D})$ ABCD $\square$

$\therefore m(\hat{EAF}) = m(\hat{D})$ (1)

$\therefore m(\hat{EFA}) = m(\hat{DFC})$ V.O.A

$\therefore \Delta AEF \sim \Delta DCF$

$\frac{AE}{DC} = \frac{AF}{DF} \Rightarrow \frac{AE}{6} = \frac{4}{8}$

$AE = \frac{6 \times 4}{8} = 3$ cm

$EB = 3 + 6 = 9$ cm

$\frac{EF}{CF} = \frac{AE}{DC} \Rightarrow \frac{3}{6} = \frac{EF}{CF}$ (2)

$\therefore m(\hat{EAF}) = m(\hat{B})$

$m(\hat{E})$ common angle

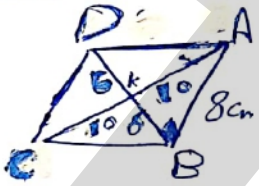
$\therefore \Delta EAF \sim \Delta EBC$

$\therefore \frac{EA}{EB} = \frac{EF}{EC} \Rightarrow \frac{3}{9} = \frac{EF}{7+EF}$

$\therefore 9EF = 21 + 3EF \Rightarrow EF = 3.5$ cm

(B) Repeated idea (model 5) 3B

(4) A) $\therefore \Delta ABK$



$(AK)^2 = 100$

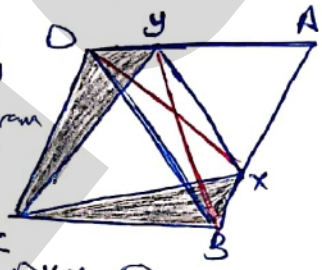
$(AB)^2 + (BK)^2 = 100$

$(AK)^2 = (AB)^2 + (BK)^2$

$\therefore m(\hat{ABD}) = 90°$

A of $\square ABCD = AB \times BD = 8 \times 12 = 96$ cm^2

(B) at first



By connecting $\overline{XD} \parallel \overline{BY}$

$\therefore ABCD$ is Parallelogram

$\overline{DY}$ Common Base

$\overline{DY} \parallel \overline{CB}$

$\therefore A$ of $\Delta DYC = A$ of DYX (1)

$\therefore XB$ Common Base , $\overline{XB} \parallel \overline{CD}$

$\therefore A$ of $\Delta XBC = A$ of ΔXBD (2)

$\therefore A$ of $\Delta XBC = A$ of ΔDYC (3)

From (1) , (2) , (3)

$\therefore A$ of $\Delta DYB = A$ of ΔXBD

$(\overline{DB})$ Common Base $\parallel$ 2 $\Delta\Delta$ on the same side $\therefore \overline{XY} \parallel \overline{DB}$

(5) $\therefore \Delta BCD \Rightarrow m(\hat{C}) = 90°$

$\therefore DB = \sqrt{(7)^2 + (24)^2} = 25$ cm

$\therefore \Delta ABD$, $m(\hat{A}) = 90°$, $\overline{AE} \perp \overline{BD}$

(2) $\therefore$ Projection of $\overline{AB}$ on $\overleftrightarrow{BD} = \overline{EB}$

$EB = \frac{(15)^2}{25} = 9$ cm

(1) $\overline{AD} = \sqrt{(25)^2 - (15)^2} = 20$ cm

(3) Projection of $\overline{AD}$ on $\overleftrightarrow{AE}$ is $\overline{AE}$

$AE = \frac{15 \times 20}{25} = 12$ cm #

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كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9